the magazine of STANDARDS

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Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Vol. 32 No. 2 FEBRUARY, 1961

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Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

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ASA

THE COVER: The beautiful and unusual buildings marking the progress of India's ancient civilization offered many opportunities for off-duty sightseeing for delegates to the 1960 General Meeting of the International Electrotechnical Commission (page 37). One of the lovely old monuments visited in the seven cities of Old Delhi was the Qutab Minar.

Photo by S. David Hoffman.

notes

• Would you like to visit Mexico when you attend the 12th National Conference on Standards at Houston, Texas, October 10-12? If so, ASA may be able to arrange tours at substantial savings. Drop a note today to Admiral Hussey at ASA headquarters. Tell him where you would like to go. If enough replies are received, ASA will start immediately to see what tours can be arranged.

• Now that the safety code outlining fundamental principles for the design and operation of local exhaust systems has been published, Sectional Committee Z9 is working on standards to help solve other exhaust problems. A new edition of the American Standard on ventilation and operation of open surface tanks is near completion. According to the subcommittee chairman, a draft may be ready for committee vote within six weeks.

• "The meetings in New Delhi improved their knowledge of the status of the world's electronics industries for many of the technical delegates who attended," reports Leon Podolsky. Mr Podolsky is chairman of the International Standards Committee of the Electronics Industries Association. He attended the IEC meetings in India (see page 37) as chairman of IEC/TC 40, Components for Electronic Equipment.

• Dr Harold S. Osborne, past president of IEC, and past chairman of ASA's Standards Council, contributed an article on "The Place of Standardization in a World of Variety" to the special issue of the *ISI Bulletin* published in honor of IEC by the Indian Standards Institution. Ellsworth F. Seaman, U.S. Navy, Bureau of Ships, chairman of IEC/SC 40-5, also was a contributor. In addition to articles by IEC and ISI officers, executives of India's industries described India's power development, electronics industry, broadcasting, the aluminum conductor industry, the electric fan industry, mica, the Indian Electrical Manufacturers Association, and the ISI itself.

This Month's Standards Personality

Arthur E. Pringle II

IN ADDITION TO THE FACT that he is interested in the "stimulating work of standardization," there is a philosophy behind his active participation in standards work, Arthur E. Pringle II has pointed out. Mr Pringle is president of the Pringle Electrical Manufacturing Company of Philadelphia. If the big companies can spend millions of dollars on research for the good of all, Mr Pringle believes that "we in smaller companies should be able to spend a few hundreds and a little effort on committee work," for the good of all.

In carrying out this philosophy, Mr Pringle has served for many years as a member of ASA's Electrical Standards Board and of the U. S. National Committee of the International Electrotechnical Commission. As a member of the Standards Council, on which he has represented NEMA since 1947, he was chairman of the ASA Committee on Procedure from 1952-1954. He was chairman of ASA's Materials and Testing Standards Board from its inception in 1954 until 1960. At the present time, he is also a member-at-large on ASA's Board of Directors.

Mr Pringle is a graduate electrical engineer from Penn State University and a registered professional engineer in the State of Pennsylvania. After graduation he worked for five years in the Engineering Department of the Bell Telephone Company of Pennsylvania before joining his father's company.

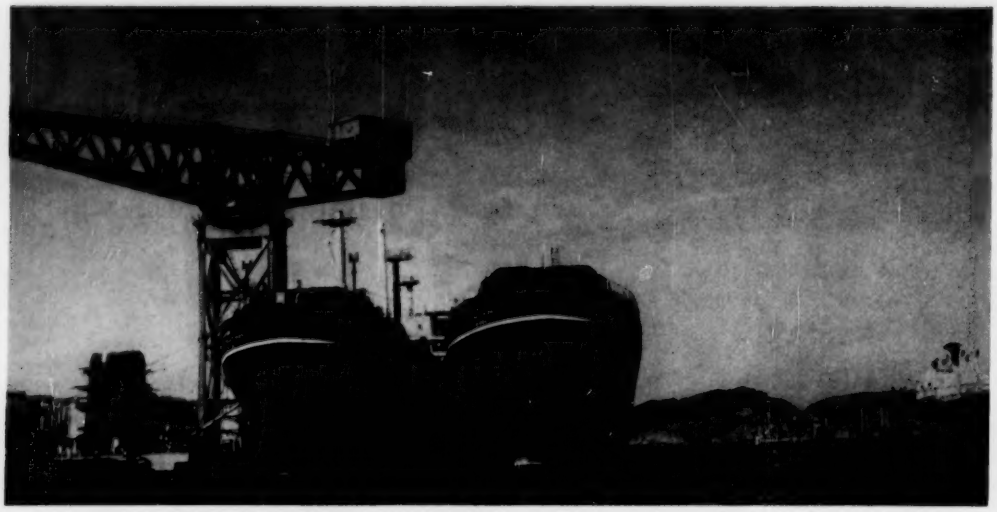
"My interest in standards started more than 30 years ago with the work on revision of the National Electrical Code by the NFPA Electrical Committee, which is now ASA Sectional Committee C1," Mr Pringle explains. "This year we are preparing for the 1962 revision and I serve on Code Making Panels 3 and 9, which have to do with services, switches, panelboards, and switchboards." Mr Pringle has been a member of the Codes and Standards Committee of the National Electrical Manufacturers Association and its predecessor committees since 1929, and vice-chairman since 1950. He was recently elected treasurer of NEMA, having been a member of the NEMA Board of Governors since 1955.

Mr Pringle also has been a member of the Standards Committee and the Committee on Industrial Power Systems of the American Institute of Electrical Engineers, and chairman of the Philadelphia Section. He is a member of a number of other societies and associations, including the Standards Engineers Society.

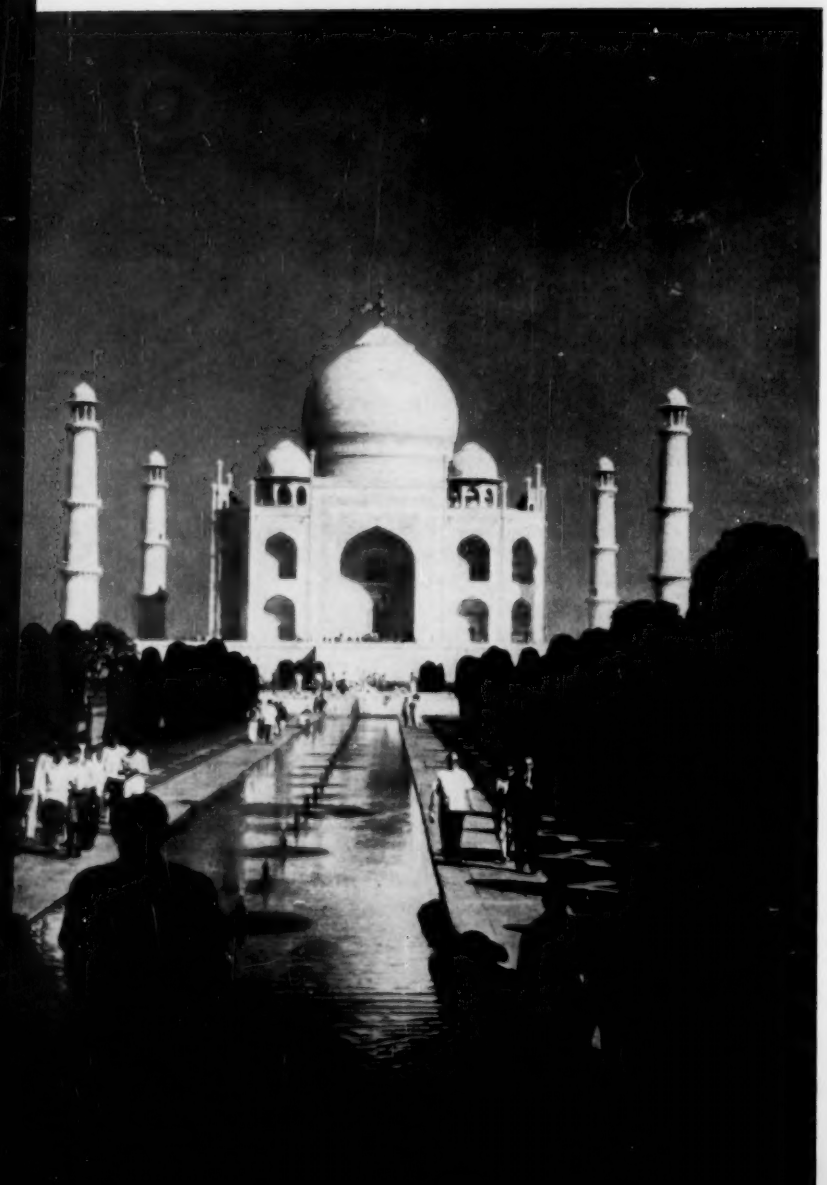
In his private life, Mr Pringle's hobby is sailing. He and Mrs Pringle spend part of each week at their home in Oxford, Maryland, where they dock their auxiliary cutter, Comea. Their principal joy, however, comes from their share in the happy family lives of their married son and daughter, and their pleasure in their three grandsons—five years, three years, and six months old.

Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

S. David Hoffman.



ABOVE: Bustling activity in the shipbuilding yards and docks of Vishakhapatnam showed India's emphasis on industrial progress. India requires that many products bear the ISI certification mark to show they meet national standards of quality or performance.



the IEC in INDIA

LEFT: India's architectural gem, the Taj Mahal, was as lovely as all reports have indicated. IEC delegates, some of whom are shown in shadow in the foreground, had the privilege of enjoying the Taj Mahal's beauty in moonlight

The Indian Standards Institution's headquarters in New Delhi houses India's work on national standards in building, textiles, chemicals, agriculture, structural materials and metals, electrotechnical engineering, and certification.

Pictures of India reproduced from 35-mm color slides. Photographer—S. David Hoffman.

by S. DAVID HOFFMAN

INTRIGUING INDIA was the site of the twenty-fifth general meeting of the International Electrotechnical Commission, October 30-November 12, 1960- the first IEC meeting to be held in Asia. Some 325 delegates, representing the national standards bodies of 26 nations, attended the sessions at New Delhi.[1] They were welcomed by India's Vice-President, who opened the meeting. Indicating the high regard in which standardization is held in India, leaders of the delegations and officers of the IEC were honored by Prime Minister Jawaharlal Nehru, who entertained them at tea and discussed with them the impact of standardization on the world's living standards.

The physical arrangements for all the meetings—the general assembly, meetings of 22 committees and subcommittees, and the Committee of Action—were impressive. Not a single detail had been left to chance. Everything was handled beautifully by the Indian Standards Institution. The delegates agreed that none had ever seen a better managed meeting.

Dr S. Radhakrishnan, Vice-President of India, extended a warm welcome to the delegates on behalf of the Government of India and the Indian people. Mentioning the International Vocabulary, many volumes of which have already been completed by the IEC, Dr Radhakrishnan quoted Confucius: "If you want to make progress in human thought, you must first define your words and determine their meanings."

India's use of standards goes back in antiquity to a pre-Aryan civilization, as early as 3000 B.C., Dr Radhakrishnan told the delegates. India at that time had a script, a system of weights and measures, and some knowledge of metrology. Today, however, "unless precision instruments are uniformly understood throughout the world, they will be of little use to us," he pointed out. "It is essential, therefore, that we define our commodities, instruments, and processes, and develop what may be regarded as an international language in electrotechnology."

Despite the fact that machines are fast bringing the world together in a single neighborhood, man is failing in developing this neighborhood into a community of fellowship, Dr Radhakrishnan said. "The fault does not lie with the machines," he commented. "Man must grow in humanity and greatness. Only then will the great work you are all doing in the field of electrotechnology be utilized for the benefit of man."

"The IEC in an Expanding Electrical Technology and a Contracting World" was the title of the sixth Charles le Maistre Memorial Lecture, presented by

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MR HOFFMAN, in charge of electrical engineering on the staff of the American Standards Association, is secretary of the U.S. National Committee of the International Electrotechnical Commission.

[1] See list, page 41.

RIGHT: At the Indian Standards Institution's headquarters (left to right) Dr A. N. Ghosh, joint director, ISI; Mrs Jan Ollner, Sweden; Dr Lal Verman, ISI director.

BELOW: Workmen use ancient methods and equipment when cutting stone to repair ancient monuments.

Gijsbertus de Zoeten, president of the Netherlands Electrotechnical Committee. (See page 42.)

Meetings of 22 IEC committees and subcommittees[2] were held at New Delhi in the Vigyan Bhavan, variously translated as "House of Knowledge" and "House of Science."

As a result of their work and their recommendations presented to the IEC Committee of Action, 9 new technical committees were authorized, and 20 draft recommendations are to be circulated for approval under the Six Months' Rule. Under this rule, a letter ballot is taken with a deadline date six months from the date of circulation. Three draft recommendations are to be sent to letter ballot under the Two Months' Rule. This is a final letter ballot taken on a revised draft. (For list, see page 41.)

One of the important decisions made by the Committee of Action at its meetings November 5 and 12 was to set up a new technical committee in the field of computers and data processing machines. This committee will be designated IEC/TC 53. Appointment of a secretariat will be postponed until the 1961 General Meeting at Interlaken, Switzerland. Both France and the USA have indicated a desire to serve. This new technical committee will cooperate with the corresponding technical committee of the International Organization for Standardization, ISO/TC 97, Computers and Data Processing Machines. The ISO committee has just been organized, with the USA holding the secretariat.

Because of the growing importance of the work on semiconductors, Subcommittee 39-2 was given the status of a full technical committee, designated IEC/TC 47. The title and scope of the new technical committee will be jointly proposed by the new group and Subcommittee 22-2 on Semiconductor Rectifiers. These two groups have a number of problems in common.

On the recommendations of a special subcommittee, the Advisory Committee on Electronics and Telecommunications (ACET), six new technical committees were authorized. A meeting of ACET will be held early in 1961 to plan for the organization of the work of these new committees:

- TC 40—Resistors and Capacitors (proposed secretariat: Netherlands)
- TC 48—Electromechanical Components (proposed secretariat: Netherlands)
- TC 49—Crystals (proposed secretariat: Netherlands)
- TC 51—Ferromagnetic Materials (proposed secretariat: Netherlands)
- TC 52—Printed Wiring (proposed secretariat: Italy)
- TC 59—Environmental Tests (proposed secretariat: United Kingdom)

Another new technical committee, IEC/TC 54 on Domestic Refrigerators, was authorized, with France as secretariat. The committee will have no chairman for the time being and will operate through an

[2] Dimensions of Motors, SC 2B; Dimensions of Carbon Brushes, SC 2F; Synchronous Machine Constants, SC 2G; Radio Communication, TC 12; Radio Receiving Equipment, SC 12-1; Safety, SC 12-2; Climatic and Durability Tests for Radio-Communication Equipment, SC 12-7; Insulating Materials, TC 15; Switchgear and Controlgear, TC 17; High-Voltage Switchgear and Controlgear, SC 17A; Low-Voltage Switchgear and Controlgear, SC 17B; Primary Cells and Batteries, TC 35; Insulators, TC 36; Sockets and Accessories for Electronic Tubes and Valves, SC 39/40; Components for Electronic Equipment, TC 40; Piezo-electric Crystals, SC 40-3; Connectors and Switches, SC 40-4; Basic Testing Procedure, SC 40-5; Shock and Bump Testing, SC 40-5/WG 1; Electric Fans, TC 43; Electrical Measuring Instruments Used in Connection with Ionizing Radiation, TC 45; Advisory Panel for Safety Matters, APSM.

Experts' Committee on Electrical Safety Requirements. Paul Poppe of Norway will be chairman of the Experts' Committee. It was agreed that the technical committee will "supply ISO/TC 86, Subcommittee 5, with electrical safety requirements for domestic refrigerators,"—another example of IEC-ISO cooperation.

Two new chairmen of technical committees were appointed. On recommendation of the Indian National Committee, secretariat for IEC/TC 43 on Electric Fans, S. N. Mukerji was named chairman of this committee. Dr Mazur was named chairman of IEC/TC 27 on Electro-heating, on recommendation of the Polish National Committee.

Technical Committee 40 on Components for Electronic Equipment had proposed that the letters "IEC" be used in a code or mark indicating compliance with IEC Recommendations. The committee is interested in developing a shorthand method of marking such items as resistors and capacitors to indicate their characteristics as completely spelled out in a particular IEC Recommendation. This suggestion was given a great deal of discussion and many different opinions were expressed. The possibility that use of the letters "IEC" might be interpreted as indicating a guarantee of quality as tied in with a certification and labeling program was the major objection. A solution was proposed by a working group under the chairmanship of Mr G. de Zoeten, with the assistance of Mr Hendley Blackmon, president of the U.S. National Committee. This policy, adopted by the Committee of Action, reads:

"1. *Instructions to Technical Committees.* It is undesirable for the name of the Commission or its abbreviations (IEC or CEI) to become interpreted in the public mind as a mark of quality. Inevitably, many would come to regard this as connoting some approval of the article by the IEC.

"Cases have occurred already and others will arise where it is desirable for an IEC Recommendation to specify a marking for the identification of a code, classification, or rating of a product.

"The use of the official monogram or mark of the insignia of IEC shall *not* be used for such marking.

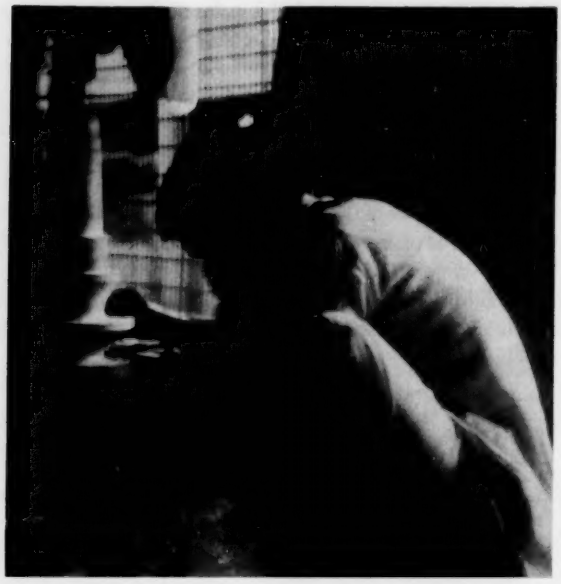
"If it is desired by a Technical Committee to identify a coding, classification, or rating, the letters 'IEC' shall be used only when followed by the relevant Recommendation number, and the appropriate coding, classification, or rating, for example:

IEC 78-50-2

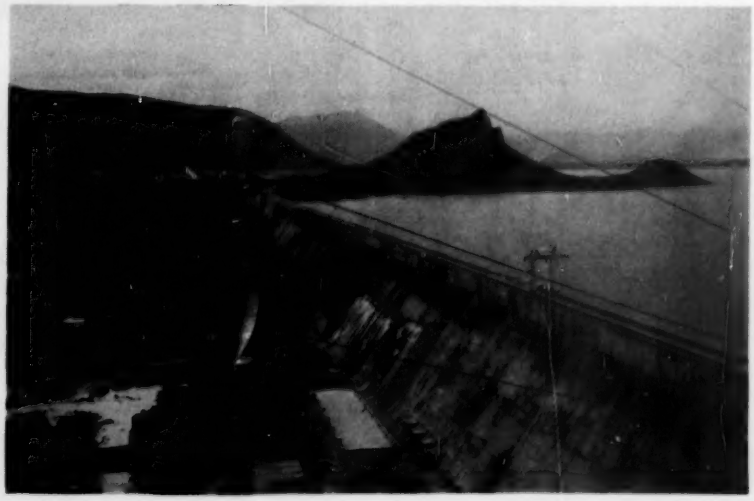
where: 78 = Rec. 78
50 = impedance in ohms
2 = Type 2

"In such cases the Foreword of the specification shall clearly state [see paragraph (2), page 40].

"If a Technical Committee wishes to introduce such an identification, it should inform the Committee of Action of its intention immediately before including such identification in its document. In general, such



ABOVE: A workman forms a porcelain insulator at the Bengal Potteries at Calcutta—one of India's centers for electric fan, radio, sewing machine, insulator, and pottery industries. Note that the workman is wearing a mask for protection against the ceramic dust.



RIGHT: The Mettur Dam and Hydel power station, one of the big projects helping India to build new industries. The delegates also visited the Damodar Valley project and the Bhakra-Nangal Project in the Himalayan foothills, one of India's largest multi-purpose projects for both irrigation and power.

Radio assembly line at the Phillips plant in Calcutta.

identification should not be encouraged on any items which are sold directly to the general public.

"2. *Paragraph to be included in the preface of relevant Recommendations.* The International Electrotechnical Commission has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its Recommendations."

Sixty-four technical committees met during the period June 1959 to May 1960, L. Ruppert, General Secretary, reported. Sixty-one documents had been circulated under the Six Months' Rule. Twenty-two IEC Recommendations had been issued in the French-English edition, and 6 in the Russian-English edition. During 1959, more than 2,000 separate documents had been circulated. In 1960, this number had already been exceeded by the middle of October.

The treasurer of the IEC, Dr Arnold Roth, presented a report which called for increasing the dues by 50 percent, commencing in 1962. During the discussion, the U.S. representatives pointed out that the U.S. National Committee has no resources of its own and would have to prevail upon businessmen to accept such an increase. It was agreed that the IEC president and treasurer would study the subject again and would make available figures and details for the information of the supporting organizations in the various countries. The president hopes that as a result of this information the members will accept the increases during the next general meeting of the IEC at Interlaken, Switzerland.

The twenty-sixth General Meeting will be held at Interlaken, June 19-30. Shri M. Hayath, chairman of the Indian National Committee for IEC, was invited to give the seventh Charles le Maistre Memorial Lecture at this meeting.

The opening date of the twenty-seventh General Meeting, to be held in Bucharest, Rumania, was provisionally set for June 22, 1962.

The delegates unanimously accepted by acclamation an invitation extended by the Italian Committee to hold the twenty-eighth General Meeting in Venice in June 1963.

AMONG THE MANY AREAS of social and technical significance in and around New Delhi itself, the delegates were privileged to visit the Taj Mahal and the the Bhakra-Nangal Project, one of India's largest multi-purpose projects, covering both irrigation and power generation.

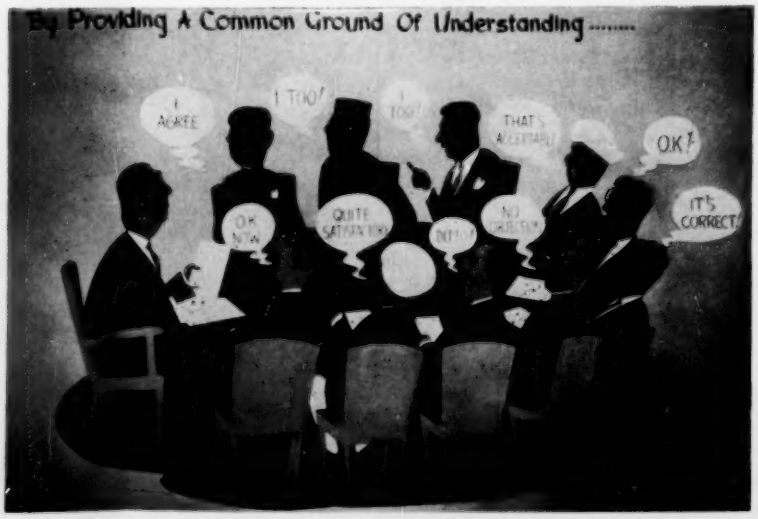
In addition, approximately 100 of the delegates and their ladies took part in an All-India tour which included visits to the following:

Industrial Areas:

Damodar Valley Corporation—The multi-purpose river valley project similar to TVA, comprising a series of dams and hydro-electric stations.

Jamshedpur—Steel, automobile, locomotive, wire and cable industries.

Mettur Dam—Cauvery Mettur system, chemical and Sandalwood oil industries.



One of the many displays at the Museum of Standards in the Indian Standards Institution's headquarters. IEC delegates were greatly impressed with the scope and quality of the Museum's exhibits.

Calcutta—Electric fan, radio, sewing machine, insulator, and pottery industries.

Vishakhapatnam—Shipbuilding yards and docks.

Madras—Switchgear, transformer, and railway coach industries.

Bangalore—Aircraft, telephone, electronic, transformer, motor, insulator, and switchgear industries.

Bombay—Atomic energy installations and motor industries.

Centers of Culture:

Banaras—Holy city of the Hindus with shrines, temples, and palaces.

Sarnath—Holy city with Ashoka Pillar, stupas, and temples where Lord Buddha delivered his first sermon after attaining enlightenment 2,500 years ago.

Bhubaneswar—City of temples dating from 715 A.D. to 1250 A.D.; new capital of Orissa State.

National committees of the International Electrotechnical Commission of the following countries were represented at the New Delhi meeting:

Argentina, Australia, Belgium, Bulgaria, Canada, China, Czechoslovakia, Denmark, France, Germany, Hungary, India, Italy, Japan, Netherlands, Norway, Pakistan, Poland, Rumania, Spain, Sweden, Switzerland, United Kingdom, USA, USSR, Yugoslavia.

The United States was represented by the following delegates:

Hendley Blackmon (leader of the U.S delegation), engineering manager, Association Activities, Westinghouse Electric Corp; president, U.S. National Committee, IEC

James T. Brothers, radio engineer, Philco Corp

Louis W. Cole, chairman, Board of Directors, Federal Pacific Electric Co

Vernon L. Cox, manager, Laboratory Operation Switchgear and Control Division, General Electric Co

John F. Dexter, manager, Electrical Product Engineering Laboratory

Barney A. Diebold, chief, Components and Materials Branch, U.S. Army Signal Material Support Agency

H. John Geisler, senior electronics engineer, Product Development Laboratory, International Business Machines Corp

Dr Eduard A. Gerber, director, Frequency Control Division, U.S. Army Signal Research and Development Laboratory

Alexander C. Grove, senior staff consultant, General Precision Laboratory

William H. Hamilton, manager, PWR Project, Westinghouse Electric Corp

Myron Scott Hancock, Consulting Engineer

S. David Hoffman, American Standards Association; secretary, U.S. National Committee, IEC

Edward Keonjian, technical staff, American Bosch Arma Corp

Kenneth N. Mathes, insulation systems engineer, General Electric Co

John C. McAdam, vice-president—engineering, International Electronics Research Corp

William A. McAdams, manager, Industry Standards, General Electric Co

C. R. Muller, engineer, ITT Laboratories

Dr Harold S. Osborne, Consulting Engineer

Leon Podolsky, technical assistant to the president, Sprague Electric Co

Arnold H. Scott, physicist, National Bureau of Standards

Roger A. Sykes, component development engineer, Bell Telephone Laboratories

Albert B. Van Rennes, vice-president, United Research, Inc

Roswell C. Van Sickle, advisory engineer, Westinghouse Electric Corp

M. Whitehead, development engineer, Bell Telephone Laboratories

F. J. Wolfe, manager, Quality and Specifications Division, Union Carbide Consumer Products Co

Stanley Zwerling, manager, Technical Requirements and Analysis Operation, General Electric Co

DOCUMENTS TO BE CIRCULATED FOR APPROVAL UNDER THE SIX MONTHS' RULE

Recommended by IEC/TC 12, Radio-communication:

Methods of measurement of essential electrical properties of receiving aerials in the frequency range from 30 MHz (Mc/s) to 1,000 MHz (Mc/s). Supplement I: Aerial gain measurements according to the reciprocity principle

Recommended by IEC/TC17, Switchgear and Controlgear:

Supplement to Chapter I of IEC Publication 56: Guide to the testing of circuit breakers with respect to the switching cables on no-load

Supplement to Chapter I of IEC Publication 56: Guide to the rating and testing of circuit breakers with respect to the switching of shunt capacitor banks

Test voltages for the rated voltage 420 kv—Addendum to the specification for alternating-current isolators and earthing switches

Specification for low-voltage distribution circuit breakers—Revision of Document 17B (Central Office) 8

Specification for low-voltage switchgear and controlgear—Revision of Documents 17B (Central Office) 9 and 9A

Recommended by IEC/TC 34, Lamps and Related Equipment:

Revision of Supplement to IEC Publication 64: Specification for tungsten filament lamps for general service

Revised standard sheet 7004-21 for the E.27 cap, and standard sheets 7006-21/22/22A for E.27 lampholder gages, of IEC Publication 61: Recommendations regarding lamp caps and holders, together with gages for the control of interchangeability

Recommended by IEC/TC 35, Primary Cells and Batteries:

Capacities of batteries for transistor radio receivers

Leakage test

Discharge test for batteries used for electronic photoflash apparatus

Recommended by IEC/TC 40, Components for Electronic Equipment:

Crystal holders

Article sheets

Vibration for connectors

Test on the operating force of toggle switches

Testing procedures for connectors for radio and sound equipment

Memorandum on the component classification in IEC Publication 68

Revision of Test J, Mould Growth, IEC Publication 68

Test Nb, Change of Temperature (short term), for inclusion in IEC Publication 68

Corrosion tests for a revised Test K, Salt Mist, IEC Publication 68

DOCUMENTS TO BE CIRCULATED FOR APPROVAL UNDER THE TWO MONTHS' RULE

40-4 (Central Office) 14, Connectors for radio and sound equipment

40-4 (Central Office) 15, Specification sheet No. 1 for rotary wafer switches

40-5 (Central Office) 12, Draft Test R, Hermetic Sealing, of IEC Publication 68

The Sixth Charles le Maistre Memorial Lecture

THE LE MAISTRE LECTURE is given annually in memory of Charles le Maistre who gave outstanding service to the International Electrotechnical Commission during his 49 years as General Secretary. The first five lectures were given by André Lange, France; Clarence H. Linder, USA; Professor Reginald O. Kapp, United Kingdom; Professor Dr Richard Vieweg, Germany; and A. M. Nekrasov, USSR. The sixth was given by Professor de Zoeten, Netherlands.

Professor Gijsbertus de Zoeten is president of the Netherlands Electrotechnical Committee, and has the title of extraordinary professor at the Technical University of Delft. He has been managing director of the N.V. tot Keuring van Electrotechnische Materialen, Arnhem (KEMA) and of the N.V. Samenwerkende Electriciteits-Productiebedrijven (SEP) since 1948. This latter is a company which organizes cooperation in the field of electricity production in the Netherlands and deals with export and import of electrical energy to and from other countries.

Since 1927, Professor de Zoeten has been honorary secretary of the CEE (International Commission on Rules for the Approval of Electrical Equipment). He has represented the Netherlands at meetings of many IEC technical committees and in 1938 was elected chairman of IEC Technical Committee 17, Switchgear and Controlgear.

In 1950, Professor de Zoeten was made Knight of the Order of the Netherlands Lion.

THE IEC IN AN EXPANDING ELECTRICAL TECHNOLOGY AND CONTRACTING WORLD

Summary of the lecture presented at the General Meeting of the International Electrotechnical Commission, New Delhi, India.

by GIJSBERTUS DE ZOETEN

THE WORLD HAS CONTRACTED considerably since the IEC was founded a little over 50 years ago, mainly as the result of development of telecommunication and transportation.

Today, the annual production of electrical energy is about 150 times as high as it was in 1904, the year in which the foundations for the IEC were laid. As, generally speaking, the equipment used in the supply industry has a service life of 20 years or more, the volume of work for the industry manufacturing such equipment as generators, transformers, and switchgear, depends to a large extent on the annual increase of electricity consumption.

There has been a continuous increase in the size of the units used. Edison built his first power station in New York in 1882 with units of about 90 kilowatts. In the first decade of the twentieth century the average value for the largest units increased to about 5,000 kilowatts. The first units of 50 to 60 megawatts appeared in the 'twenties. After the introduction of hydrogen instead of air as a cooling medium, and later the so-called direct cooling method, the unit size further increased. Nowadays many turbogenerator sets of 120 megawatts and over are in operation; a number have already reached or surpassed the 200-megawatt mark, and even a 350-megawatt set is on order. A 550-megawatt two-shaft unit is under construction and an order for a 650-megawatt two-shaft unit has been placed.

Another effect of the increase in electricity production is the rise of the highest nominal voltage used for transmission, interconnection, and distribution.

Surveying the world as a whole, we see that in the last decade of the nineteenth century, system voltages did not exceed 40 kilovolts. As early as 1901, a nominal voltage of about 60 kilovolts was introduced for the first time, followed by nominal voltages in the range from 110 to 150 kilovolts in the period between 1908 and 1913. The next landmark was the introduction of 220 kilovolts for the first time in 1923 in the United States of America and in 1929 on the European continent. In 1952 a new highest value of nominal system voltage appeared when the first 380-kilovolt line was commissioned in Sweden. Some years later this example was followed successively in the Soviet Union, in Germany, and in France. Plans for a 380-kilovolt European grid are growing.

Heavy equipment, such as transformers and high-voltage switchgear, has also been influenced. The largest transformers in operation today have a rating of about 400 megavolt-amperes for three-phase transformers and of 700 megavolt-amperes for a bank of three single-phase autotransformers. Today, the sym-

These officials, who are participating in the meeting of the IEC Committee of Action at New Delhi, are (left to right) John O. Knowles, chairman, British National Committee; J. F. Stanley, secretary, British National Committee; William A. McAdams, vice-president, U.S. National Committee; and Hendley Blackmon, president, U. S. National Committee.

metrical rated breaking capacity of circuit breakers for 220 kilovolts amounts to about 10,000 megavolt-amperes and for 380 kilovolts to about 15,000 megavolt-amperes with a tendency to increase to something like 20,000 megavolt-amperes.

Developments in telecommunication, the second field of electrical technology, have been breathtaking since 1904.

The growth of IEC work indicates that IEC can keep pace with the expanding technology. We can rejoice in the fact that, in matters of electricity, there is no difference in units as we know them in other technologies, that internationally recommended symbols are used nearly everywhere, and that IEC recommendations on specifications are followed completely or to a large extent in many countries.

Despite this record of achievement, improvement is needed.

Greater progress is needed in international standardization with regard to electricity supply systems. Some of the present deficiencies will have to be accepted for the future, because too great a sacrifice would have to be made in eliminating them. Today, two regions of nearly equal importance are using 50 and 60 Hz (c/s), respectively.

Standardization of alternating-current system voltages below 1,000 volts is another example of lack of standardization. The IEC recommendation which provides for a choice between 240-415 on the one hand and 277-480 on the other should be re-examined.

The situation is even less satisfactory with regard to system voltages above 1,000 volts. There are two series of standard voltages below 60 kilovolts and the steps in the series are too small. This situation also calls for re-examination. Before the last world war, there seemed to be common agreement on 220 kilovolts as the highest value of the series of nominal system voltages. After the war, however, the IEC introduced as new values for nominal system voltages 275 and 380 kilovolts. However, values between 275 and 380 were chosen in some countries for new systems and there is a tendency to use a voltage in the neighborhood of 500 kilovolts. IEC should make every effort to bring about agreement.

IEC recommendations should not be considered as a framework into which the national committees may put the details they consider to be of use in their countries. International trade requires complete uniformity of specifications. Unless IEC issues recommendations as complete as knowledge of the art permits, confusion will increase with increase in the number of countries issuing specifications.

IEC should start work on new subjects at an early stage in their development. Especially in the telecommunication field, experience has shown that an early start, even before national specifications have been finally established, promotes the chance of wide application of the IEC recommendation.

In the case of electrical equipment intended mainly for the use of laymen, specifications are different from those for equipment intended for use by industry and others skilled in the art.

Many specifications for this group [the laymen] are limited to safety and reliability. In nearly all

IEC officers and heads of delegations were received for tea at the home of Prime Minister Nehru. Seated (left to right): P. Salmon, ISO; General E. E. Weiner, Belgium (Honorary President, IEC); Prime Minister Nehru; Dr I. Herlitz, Sweden, IEC President; Dr A. Roth, Switzerland, Treasurer. Standing (left to right): Dr Lal C. Verman, India; Louis Ruppert, IEC General Secretary; Dr H. S. Osborne, USA (IEC Past President); P. Ailleret, France; Hendley Blackmon, USA; Dr P. H. Waldvogel, Switzerland; Dr Percy Dunsheath, UK (IEC Past President); Professor G. de Zoeten, Netherlands; I. Miletineanu, Rumania; G. Someda, Italy; J. O. Knowles, UK; Dr Richard Vieweg, Germany.

U.S. delegates at the meeting of IEC/-TC 40, Components for Electronic Equipment. Standing (left to right): B. A. Diebold; M. Whitehead; J. Giesler; S. T. Zwerling; C. Muller. Officers are: Secretary, L. Van Rooij, Netherlands; L. Podolsky, USA, chairman. Man seated at left unidentified.

countries, measures are deemed necessary to protect the public against accidents which may be caused by unreliable equipment. These measures are not identical in the various countries.

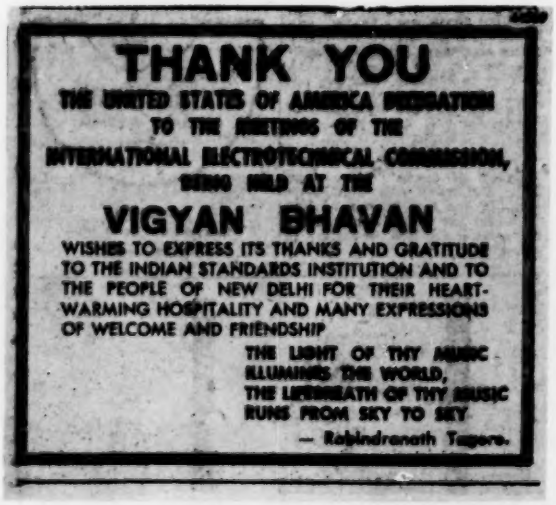
There is a growing tendency, however, not to limit the scope of specifications for appliances and apparatus for domestic use to requirements and tests on safety and related matters, but to include requirements and tests with regard to performance. The main compulsive power behind this tendency comes probably from the consumers, who have created in various countries organizations to represent and promote the interests of the consumer. They show a definite interest in the performance of electrical appliances and apparatus for domestic use, primarily because of the growing importance of this equipment in running the household and in the household budget. Advice is needed by housewives when they must decide on purchasing rather expensive equipment which has to serve them for an appreciable time. Due to the rapid development of the art, they feel they cannot rely on the experience of other users, and the equipment is often so complicated that they become aware of the fact that their own judgment cannot be relied upon.

National electrical standardization organizations are confronted with this situation and it will probably not be long before international organizations, like the IEC, should examine the matter in order to prevent national opinions growing so far apart that international agreement will become difficult.

Specifications on the performance of this type of equipment should, as a rule, be limited to a list and definitions of the properties of the equipment which determine its performance, and to descriptions of the tests by which figures can be obtained that characterize the various properties. Such specifications would provide a generally accepted basis for the provision of indisputable data for all who consider it their duty to inform the public, be it manufacturer, trader, contractor, consumers' organization, or whosoever.

With perhaps a few exceptions for simple cases, these specifications should not comprise minimum or maximum values for the figures characterizing the performance. For certain appliances, the most desirable combination of characteristics, which may be mutually contradictory, depends on the conditions in the household where the appliance is to be used, and there will also be features which cannot be judged by tests or in a similar objective way. The second reason is the difference in price that may be involved, as often the design of an appliance is a compromise between performance and price. It is not reasonable to expect the same performance from appliances or apparatus which widely differ in price.

The emphasis we place on national acceptance of international standards depends on the expectation we have of the development of international trade. The world seems to be gradually moving in the direction of lifting the barriers against the exchange of goods between countries. At least we, as engineers, should not be in the rearguard of this movement. Let us, at least in our own field, show that we can lift barriers caused by differences in national specifications by adopting international recommendations which are good and have been carefully prepared. If we are not able to do so, we have no right to blame others for shortcomings in the field of international cooperation.


THANK YOU
THE UNITED STATES OF AMERICA DELEGATION
TO THE MEETINGS OF THE
INTERNATIONAL ELECTROTECHNICAL COMMISSION,
BEING HELD AT THE
VIGYAN BHAVAN
WISHES TO EXPRESS ITS THANKS AND GRATITUDE
TO THE INDIAN STANDARDS INSTITUTION AND TO
THE PEOPLE OF NEW DELHI FOR THEIR HEART-
WARMING HOSPITALITY AND MANY EXPRESSIONS
OF WELCOME AND FRIENDSHIP
THE LIGHT OF THY MUSIC
ILLUMINES THE WORLD,
THE LIFEBREATH OF THY MUSIC
RUNS FROM SKY TO SKY
— Rabindranath Tagore.

In appreciation for the warm hospitality of the Indian Standards Institution, the USA delegation placed this notice in one of New Delhi's leading newspapers.

Industrial Standardization — A VALUABLE TOOL FOR ECONOMIC PROGRESS

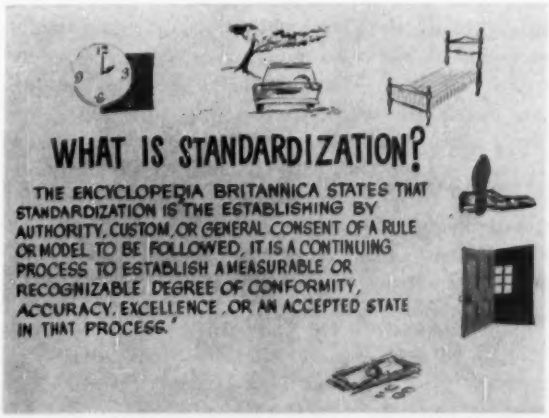
by I. R. WEIR

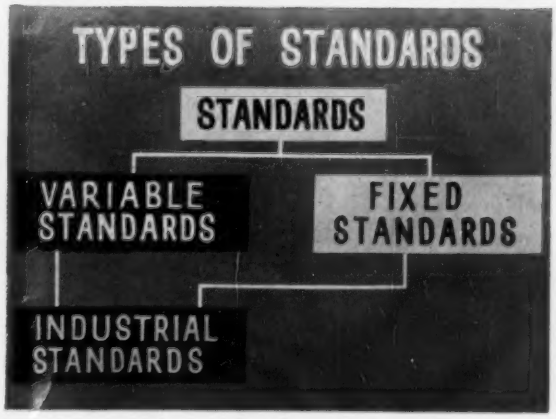
WHEN AND WHERE was standardization first started? No one really knows, since the origin of standardization goes back into the crude beginnings of human culture in the Tigris and Euphrates valleys. In ancient times, community life was governed by customs and common rules administered by the heads of groups of people. These gave rise to the first standards of life. Common speech, picture writing, phonetic symbols, religion, laws, division of time, were standards of living.

The oldest written standard we know about today is the Hammurabic Code which was carved on an 8-foot stone 1,000 years prior to Moses' Ten Commandments. The Hammurabic Code contained standards which are found among all people having an advanced civilization. History shows that standardization is incorporated in all advancement of civilization and economic progress. By the application of standardization, the moral and economic conditions of the world have advanced, and countries that apply standardization most, advance most. So it is with companies. The company that applies standards the most, advances its economic operation the most. If a company wishes to make greater economic progress, it must use standards more than it does today.

According to the Encyclopedia Britannica, standardization is "the establishing by authority, custom, or general consent of a rule or model to be followed; it is a continuing process to establish measurable or recognizable degrees of uniformity, accuracy, or excellence, or an accepted state in that process." For example, in building a house, exchanging money, or even in something as simple as driving to and from our jobs, we see standardization at work as a common solution to a recurring problem.

Standards can be divided into two different categories: those which are permanently fixed, and those which vary with time. Fixed standards are those which are legally defined or based upon physical laws, such as standard time, weight, and measurements. The Hammurabic Code fixed the day into 12 double hours, the same system that we use 4,000 years later. On the other hand, variable standards are those which are fixed in a period of time but are in a continual state

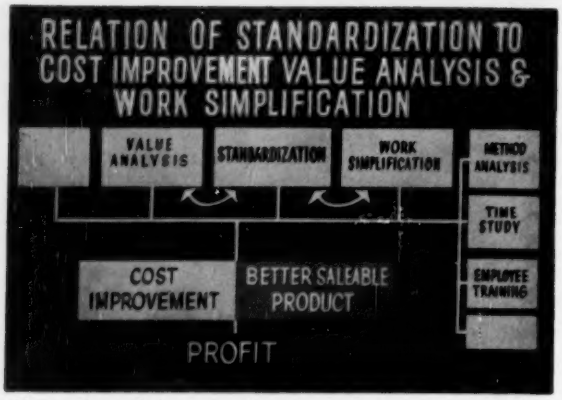

WHAT IS STANDARDIZATION?
THE ENCYCLOPEDIA BRITANNICA STATES THAT STANDARDIZATION IS THE ESTABLISHING BY AUTHORITY, CUSTOM, OR GENERAL CONSENT OF A RULE OR MODEL TO BE FOLLOWED, IT IS A CONTINUING PROCESS TO ESTABLISH A MEASURABLE OR RECOGNIZABLE DEGREE OF CONFORMITY, ACCURACY, EXCELLENCE, OR AN ACCEPTED STATE IN THAT PROCESS.'



Charts prepared by G-E's Heavy Military Electronics Department sell G-E personnel on the functions of standardization, value analysis, and simplification. Here the encyclopedia definition is illustrated and types of standards listed.

MR WEIR is a specialist in cost improvement studies at the General Electric Company's Heavy Military Electronics Department, Syracuse, N. Y. In this capacity, which he has held for the past three years, Mr Weir is responsible for promoting and maintaining the Department's cost improvement programs, including supervision of the Value Analysis, Standardization, and Work Simplification seminars.

Mr Weir is a Fellow of the Institute of Radio Engineers (IRE) and has served for the past ten years on the IRE Transmitter Standards Committee. He was president of the Central New York State Professional Engineering Society in 1955. Recently he was elected a national director (at large) of the Standards Engineers Society.



Charts show definitions of value analysis, work simplification, and standardization.

of flux; for example, standards of living, standards of comfort, and standards of fashion. These standards are fixed today, but are continuously changing. The standards of living when you were a boy were far different than they are today.

Industrial Standards

The term "industrial standard," covering standards used in industry, primarily deals with variable standards, although both fixed and variable standards might be included. In our economy, use of industrial standards is voluntary. Therefore, to be acceptable, industrial standards must be useful. They must be capable of change as conditions change which influence them. They must keep step with changing economic conditions and new industrial developments. Industrial standardization has made a significant contribution to the release of human energies, an essential requirement to increase productivity and to stimulate the growth of individual initiative and inventive work.

How is Standardization Related to Value Analysis and Work Simplification?

Standardization, value analysis, and work simplification are the tools for obtaining cost improvements, products that are more saleable, and greater profits. Each of these tools represents a different approach to cost improvement.

They can be defined thus:

1. *Value Analysis* is a scientific study of a product or service to reduce cost without impairing the desired quality.

2. *Work Simplification* is the organized application of common sense to do a better job with less effort, in less time, at the lowest possible cost.

3. *Standardization* is a scientific study of a primary tool designed and fashioned for potential users to accomplish an objective by economical, acceptable, useful, and uniform means.

These definitions indicate that Value Analysis is primarily concerned with economy of products with the same or improved value. Work simplification is more concerned with economy of actions of a human being; while standardization is more concerned with acceptable, useful, and measurable degrees of uniformity of products and ways of doing things.

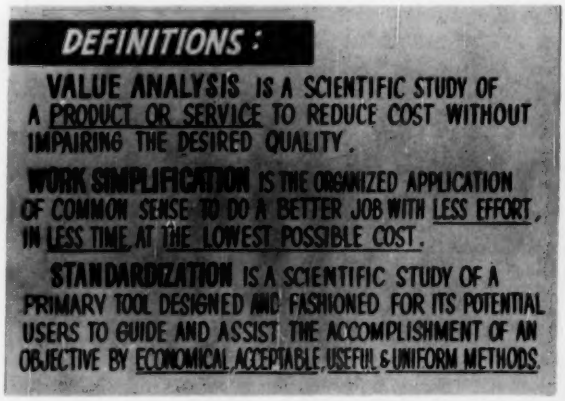
In applying these tools to a particular problem, each tool is used to a varying degree. For some types of problems, one of these tools is better than the other two, while in most cases all three tools must be used. Charts show how these tools are used to solve typical industrial problems and illustrate the degree of importance each tool plays in the solution of the problem. The selection of the tool depends upon the problem to be solved. For example, the work simplification tool is of prime importance in obtaining better methods and processes. Value analysis, on the other hand, is more important when lower costs and better application materials are the problem to be solved. Standardization plays a leading role in obtaining better, more concise instructions, and in reducing the numbers of duplicate items.

In every case of work simplification, a successful solution to a problem results in a standard by combination or elimination. And in order to apply the tool of Value Analysis to a product, there must be a standard before starting the analysis work.

Successful Standardization by Seminar Method

A very successful Standardization Seminar was conducted in the General Electric Company's Heavy Military Electronics Department, Syracuse, N. Y., during March and April, 1959, on six projects. Twenty-four people attended—mechanical and electrical engineers, accountants, factory engineers, draftsmen, and component engineers. The six projects studied concerned the standardization of:

1. Hook-up Wire
2. Handles
3. Multi-conductor Cable
4. Quick-Release Fasteners
5. AN Connectors
6. Plug-in Type Connectors for Encapsulated Modules


DEFINITIONS :
VALUE ANALYSIS IS A SCIENTIFIC STUDY OF A PRODUCT OR SERVICE TO REDUCE COST WITHOUT IMPAIRING THE DESIRED QUALITY.
WORK SIMPLIFICATION IS THE ORGANIZED APPLICATION OF COMMON SENSE TO DO A BETTER JOB WITH LESS EFFORT, IN LESS TIME AT THE LOWEST POSSIBLE COST.
STANDARDIZATION IS A SCIENTIFIC STUDY OF A PRIMARY TOOL DESIGNED AND FASHIONED FOR ITS POTENTIAL USERS TO GUIDE AND ASSIST THE ACCOMPLISHMENT OF AN OBJECTIVE BY ECONOMICAL ACCEPTABLE, USEFUL & UNIFORM METHODS.

Standardization contributes to both value analysis and work simplification with profit the ultimate result.

Each of these six projects was studied by a group of four men. The standard solution proposed in each case was excellent. One example will be cited to give a view of the benefits derived from this Standardization Seminar.

Standardization of Hook-up Wire

G-E's Heavy Military Electronics Department uses enough hook-up wire each year to reach from Syracuse to San Francisco. Due largely to the lack of standardization, we formerly scrapped enough wire to run from Syracuse to Erie, Pennsylvania. This lack of standardization also affected many other phases of operation. Before the seminar, we used approximately 400 types of hook-up wire.

During the seminar, the group collected all of the facts, including engineering specifications, on the different types of wire used. This information was then charted on dozens of individual charts so that the similarities that existed, as well as the small differences, could be studied and evaluated by both engineering and production specialists. After careful study of all these charts, the group developed a set of various alternatives that might be used. The judicial method of decision-making was then employed in preparing the final standards.

These are some of the typical benefits to be obtained in all phases of HMED's manufacturing operation as a result of the hook-up wire standard proposed by the seminar group:

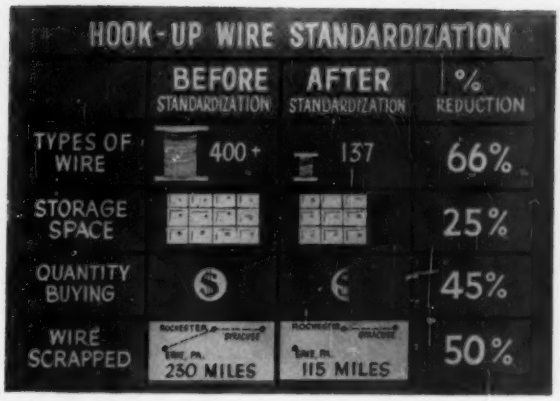
1. One-hundred and thirty-seven (137) standard hook-up wire types and sizes will replace the present 400 types and sizes. Eight types of solid buss wire, of which two were insulated, will replace the present unlimited types. These satisfy our engineering requirements.

2. The use of only 137 types will reduce the type of wire carried in stock by 66 percent, which will reduce storage space by some 25 percent or more.

3. We can realize up to 45 percent saving through quantity buying.

DEGREE of APPLICATION of C.I. TOOLS to PROBLEMS		1 2 3	
PROBLEM	USE OF WORK SIMPLIFICATION	USE OF STANDARDIZATION	USE OF VALUE ANALYSIS
	1	3	2
	2	3	1
	1	2	3
	3	1	2
	2	1	3
	3	2	1

How the Cost Improvement Tools (work simplification, standardization, value analysis) are applied.



An example of applied standardization—hook-up wire.

4. The wire which is scrapped annually can be reduced 50 percent or more.

5. Untold saving in manhours will be made by using the Electronic Industries Association's color coding system in our wire part numbers.

This gives a brief story on the saving resulting from just one of the seminar projects. Similar results were accomplished on the other five projects. The results of these six projects will save hundreds of thousands of dollars for General Electric's Heavy Military Electronics Department.

Standardization Can Be Applied Everywhere

Standardization is not an area exclusively reserved for engineering work or any one functional area of your company. Standardization principles, processes, and methods are equally applicable to all sections of your company where appropriate.

Standardization must be applied in all functional areas of your company. There are standardized procedures and reports in Accounting. There are standardized terms, warranties, and methods of selling in Marketing. There are standard means of testing, methods of manufacturing, and procedures to follow in Purchasing. We have standardized working hours, standardized methods of paying employees. There are standardized sizes of stationery for recording and communicating, and standardized safety rules in the factory. Standardization can be applied in all functions as a technique of economic progress.

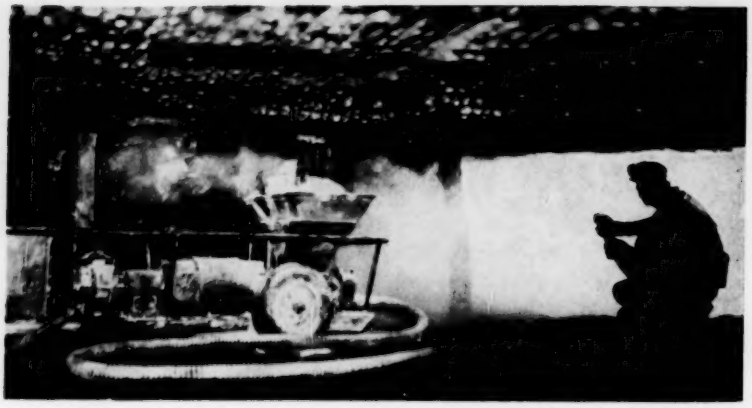
History has shown from the crude beginning of human life in the Tigris and Euphrates valleys to the present day that the more standardization is applied, the more the economy of a country advances.

This is true, also, in your company and your own individual life.

Let standardization solve your recurring daily problems, then you have more time to do creative work.

Help yourself, your company, and your country's prosperity by applying standardization—a valuable tool for economic progress.

new standard tells how to use rock dust to



Rock dust is here being applied in a coal mine to neutralize the hazard of a coal dust explosion.

PREVENT MINE EXPLOSIONS

Contributed by the Bureau of Mines, U.S. Department of the Interior

SINCE THE FIRST recorded explosion in an American coal mine in 1810, about 14,000 miners have been killed in such disasters. These tragedies also have destroyed whole mines, bankrupted companies, and have caused disbandment of mining towns.

Modern mining men readily recognize the hazard of bituminous coal dust and the effectiveness of rock dust in neutralizing that hazard—experience and research are powerful teachers—but this has not always been the case. In the nineteenth century, scientists such as Davy, Faraday, and Rice attempted to alert the mining public to the fact that bituminous coal dust was explosive. Few, however, heeded the warnings. They held steadfast to the belief that only the methane gas found in coal mines was dangerous. They more or less accepted the fact that explosions were a mining risk and could not be prevented.

At the turn of the century, with inception of modern industrialization, coal mines increased in number, size, and depth, and the frequency and severity of explosions became alarming. In the 1890's, 1,500 men died, and during the first decade of this century, 4,000 miners were killed in gas and dust explosions in coal mines in the United States. Elimination of this great toll in an industry that is basic to the growth and development of our country became a matter of national concern. It was one of the first problems attacked by the newly established Bureau of Mines in 1910.

Research conducted in the Bureau's Experimental Coal Mine proved that rock dust was highly effective in preventing propagation of coal dust explosions. This confirmed earlier studies abroad, particularly in England. The Bureau's studies were more exacting. Factors such as the effects of particle size, type of dust, method of distribution, and quantity of dust were studied and the findings were correlated with those from similar experiments in other major coal-producing countries. Demonstrations conducted at the Experimental Coal Mine marked a turning point in the attitude of coal-mining men who witnessed these violent explosions and who realized that coal dust itself was indeed dangerous even without methane in the air.

Following studies by the Bureau of Mines, some of the more progressive coal companies began applying rock dust. Experience thus gained proved the measure was effective and practicable. Subsequently, the first set of American Standard Practices for Rock Dusting in Coal Mines was prepared in 1925. These were reaffirmed in 1942. Since then the coal-mining industry has undergone a transformation. Intricate and powerful machines have largely replaced hand labor; mining is progressing at an increasingly faster tempo. The many technological advances have created new problems in safety and, particularly, in the use and the application of rock dust. Greater quantities of coal dust are produced, made airborne, and are being deposited in portions of a mine where rock dusting is often difficult to maintain. In addition, methane is generally being liberated at a faster rate and in more inaccessible places, and the complex electrical and hydraulic systems on the mining machines are presenting new potential ignition sources. Recognition of these changing trends and their effect on the application and maintenance of rock dust in mines has motivated the preparation of the current American Standard Practice for Rock-Dusting Underground Bituminous-Coal and Lignite Mines to Prevent Coal-Dust Explosions, M13.1-1960.

Several contributory factors are responsible for the decrease in recent years of the number and severity

of mine explosions: education of the workmen, recognition of the hazards by the mine operators, improved ventilation, use of permissible electrical equipment and explosives, inspection of mines and enforcement of statutory regulations by state and federal officials, and particularly the proper use of rock dust. About 500,000 tons of rock dust now are used in American coal mines every year—more than 2½ pounds per ton of coal mined. The proper application and maintenance of this lifeguarding dust is vitally important to continued improvement in mine safety.

In the 1950's, 334 men were killed in gas and dust explosions in coal mines in the United States—only one-fourth of the number who lost their lives in the decade immediately preceding acceptance of the first American Standard Practice for Rock Dusting, and less than one one-hundredth of the number killed in the first decade of this century. This record is encouraging, but is not good enough to permit complacency; ignitions and fires still occur in mines. Many of these could have been of major consequence. Greater vigilance and constant evaluation are required before the battle to control and prevent mine explosion disasters can be won.

AMERICAN STANDARD Practice for Rock-Dusting Underground Bituminous-Coal and Lignite Mines to Prevent Coal-Dust Explosions, M13.1-1960, has been published by the Bureau of Mines, United States Department of the Interior, as Information Circular 8001. Copies can be obtained at 50 cents each.

This revision of a 1925 standard was prepared by a sectional committee sponsored by the Bureau of Mines. Representatives of the following organizations were members: American Mining Congress, Association of Casualty and Surety Companies, Bituminous Coal Operators' Association, Mine Inspectors' Institute of America, National Safety Council, Southern Coal Producers' Association, United Mine Workers of America, U.S. Department of the Interior, Bureau of Mines, and one member-at-large, J. D. Clung. John Nagy served as chairman of the committee, representing the Bureau of Mines, sponsor. R. W. Stahl, Bureau of Mines, is secretary.

The standard defines the terms used, explains the purpose and the extent to which rock dusting should be done in mines, and specifies the way in which both dry rock dust and wetted rock dust are to be applied and maintained. This includes specifying the percentage of incombustible material that must be maintained in relation to the combustible coal and lignite dust. The standard also provides for inspection, including sampling of the dust from various positions in the mine. An appendix suggests a laboratory test for the caking tendency of rock dust and outlines the test procedure.

PATENTS POSE PROBLEMS for international textile committee

by K. L. HERTEL

THE METHOD OF WRITING standards involving proprietary or patented instruments was a question of high priority at the meeting of the Textile Committee of the International Organization for Standardization, ISO/TC 38. The committee, along with some associated subcommittees and working groups, met in London, May 19-27, 1960. Representatives from 23 countries participated as delegates or observers: Belgium 5, Canada 1, Czechoslovakia 3, Denmark 1, France 11, Germany 11, Great Britain 27, Hungary 2, India 6, Italy 6, Netherlands 8, New Zealand 1, Norway 1, Pakistan 1, Poland 2, South Africa 1, Spain 1, Sweden 1, Switzerland 2, Turkey 1, USA 17, USSR 3, Yugoslavia 1, (staff 9).

This was the fourth plenary conference held by ISO/TC 38. In 1956, the conference had been in Southport, England. Much work had been carried out by correspondence in the interim, but nothing contributes to clarification, mutual understanding, and progress as does an across-the-table discussion, even though there are language barriers. The conference was conducted in English and French, with the Russian contributions being first translated into English.

MR HERTEL, director of the Fiber Research Laboratory, College of Agriculture and Home Economics, University of Tennessee, was leader of the 17-man U.S. delegation at the 1960 meeting of ISO/TC 38 in London, England.

The problem of proprietary or patented instruments was actually raised at Southport without being satisfactorily answered.

Many test procedures that come before ISO involve specialized apparatus that can be developed best by the limited protection of patents. The adoption of a test method by a standardizing body not only lends prestige to the specific apparatus involved, but also, even more importantly, creates almost a monopoly for the scale, the units, and the nomenclature used. Whereas a patent becomes less important as time goes on and eventually expires, the monopoly of scale, units, and nomenclature becomes even more rigid with time, tradition, and accumulated data.

The problem of the proprietary instrument was placed high on the agenda of the London meeting and had to be dealt with before action on other items of the agenda would be meaningful.

After preliminary matters were disposed of, a statement of the USA position on proprietary instruments was made. Tenseness admixed with an undeniable determination to arrive at a solution could be sensed in the meeting. The areas of agreement among the contending delegates were sufficiently extensive so that with time and a little "give and take," final agreement was secured. It was formulated in resolution 4 as follows:

"Testing methods based on the use of one or more specific (proprietary) instruments should be arranged so that the mandatory clauses relating to such instruments prescribe only the principles of operation and performance requirements governing the accuracy of the test results provided by such instruments, but may give, in appendices, names, sources, and descriptions of instruments, with relevant operating instructions.

"It is understood that it would not be practicable to produce an ISO Recommendation which depends directly or indirectly on exclusive manufacturing rights, e.g., as a consequence of patents."

This action was implemented by the following disclaimer clause prepared in the meeting of Working Group 1 of Subcommittee 6 on Fiber Tests:

"Mention of the name of a specific (or proprietary) instrument is not intended to promote, or give preference to, the use of that instrument."

A systematic method for yarn and cord structure designations received further consideration. One suggested method starts with the singles yarn and proceeds to describe the end product as it would be manufactured. The other starts with the final product and proceeds in the opposite direction to the initial yarn components. The first approach was favored by the conference (vote 14-2) and Subcommittee 4 was instructed to prepare a proposal along this general line.

The universal system of yarn count based on the tex unit has been actively considered by ISO/TC 38 since 1948, and has been approved by national standards bodies of 29 nations. It is now available for industry to put into operation, so that the confusion of the multitude of current numbering systems can be minimized, the number of yarn sizes in commerce can be decreased, and textile mathematics made simple. The benefits of the unified direct numbering system will only be realized if the industry puts the system into operation.

The adoption of the new tex unit for yarn count implies changes in the skein test. The present 80 wraps (160 yarns) on a 1½-yard reel should be replaced by either 100 wraps or 100 yarns (50 wraps) on a one-meter reel. The membership is to be polled for advice as to which sized sample is preferred.

The calculation of twist factor using tex units was considered. If calculated as the product of the square root of yarn count in tex by turns per millimeter, the result is a number close to the present one using cotton count and may be confusing. This problem is to be considered by Subcommittee 4.

The Draft ISO Recommendation No. 113 on Standard Atmospheres, although accepted and registered under reference ISO Recommendation 139-1960, is to be examined for possible improvement. The Technical Committee Secretariat was requested to reconsider Section II on Preconditioning and more nearly equalize the status of the 20 C and 27 C requirement by replacing the word "supplementary" by "optional" when referring to the 27 C temperature.

The properties of textiles are often not only a function of the ambient temperature and humidity, but also of the previous conditions of temperature and humidity. Thus the preconditioning of samples is important and must be specified to prevent overheating and overdrying. It has been suggested, therefore, that the preconditioning temperature should not exceed 120 F, and the relative humidity should not be lower than 5 percent.

A draft resolution bearing on the standard temperatures is to be prepared in collaboration with India and submitted to the members by postal ballot.

New working groups were authorized to undertake work on quality of bast fibers, crease resistance of cloth, and simple names for man-made fibers, with the secretariats in Belgium, Germany, and France, respectively. It was decided that chemical degradation of cellulosic textiles should be referred to Working Group 5 with the necessary authority to undertake such work.

The Working Group on Cotton Fiber Tests considered tests on (1) trash content of cotton, (2) general methods of sampling fibers, (3) fiber maturity, (4) determination of length by the array method, and (5) artificial lighting of cotton classing rooms. Draft ISO Recommendation No. 224 including micronair fineness, Pressley strength, and sampling cotton had been referred back to the working group. It recommended further work on the first two and advancement of the section on sampling for final ISO approval.

Subcommittee 5 on Yarns put finishing touches on a standard method for the skein test and for the unevenness of textile strands, both of which are to be submitted for postal ballot. In addition, the subcommittee examined critically the definitions of pertinent textile terms, striving for more lucid and accurate statements describing them.

The evolution of good international standards requires much thought and patient work because of the broad spectrum of tradition and needs represented by the many countries served. The Textile Committee (ISO/TC 38) is to be congratulated upon its forthright attack on the many knotty problems and its persistent pursuit of its goals.

Scientific Quantities, Units, and Symbols for World Use — DELEGATES URGE U. S. ACTION

U.S. DELEGATES to an international meeting on quantities, units, and symbols are urging organization of a committee to develop more actively U.S. viewpoints for presentation at future meetings. Professor Harald H. Nielsen, chairman, Department of Physics and Astronomy, The Ohio State University, and Dr Guy Waddington, director, Office of Critical Tables, National Academy of Sciences, National Research Council, are the delegates making the recommendation. They attended the meeting of ISO Technical Committee 12 on Quantities, Units, Symbols, Conversion Factors, and Conversion Tables, at Copenhagen, Denmark, June 28-July 2, 1960.

Forty-three delegates from 20 countries attended the meeting as participating members. In addition, representatives of two countries and six international scientific organizations attended as observers.

Recommendations to be considered at the meeting had been referred for comment to a review committee organized for this purpose by ASA Sectional Committee Y10, Letter Symbols.

According to the delegates, the official U.S. comments were inadequate, primarily because the functions of ASA Sectional Committee Y10 do not parallel those of ISO/TC 12. The emphasis in Y10 is on letter symbols, whereas TC 12 in addition to efforts to standardize letter symbols delves deeply into the nature and definition of physical quantities, the unit systems in which they are expressed, standard abbreviations, and conversion factors and tables.

At the 1960 meeting, the ISO committee discussed recommendations on quantities, units, symbols, and conversion factors in the fields of electricity and magnetism, acoustics, physical chemistry and molecular physics, atomic and nuclear physics, and nuclear reactions and ionizing radiations. The sections on electricity and magnetism and on acoustics, after amendment, were approved subject to confirmation by ISO member-bodies. Agreements were reached on various fundamental aspects of the other proposals and revised documents are to be prepared and circulated for comment by the member-bodies.

It was also agreed that the Danish secretariat is to prepare a first proposal for quantities and units of light. This will take into account the vocabulary issued by the International Commission on Illumination and recommendations of the organizations concerned.

Professor Nielsen, leader of the U.S. delegation, reports the following impression of the meeting and recommendations by the U.S. delegates.

Comments by the U.S. Delegation

The two representatives of ASA were impressed by the competence, experience, and enthusiasm of many of the participants at the meeting. It is obvious that the national bodies of the member countries had exercised great care in the selection of delegates and had been successful in obtaining the cooperation of outstanding, internationally known scientists in the various branches of physics and chemistry under consideration. This was the fifth plenary meeting of ISO/TC 12. The committee meets every two or three years, and many of the leading participants from other countries have been associated with the activity for some time and are well versed in the complexities and subtleties connected with the historical development of the program.

Broadly speaking, the plan is to produce recommendations for the quantities, units, symbols, conversion factors, and conversion tables used in all of the more important branches of the physical sciences. Moreover, this goal is to be accomplished with due regard for the need of consistency throughout the whole set of documents. The scope of the program has been carefully delineated, much detailed ground work has been established, and the total program can perhaps be described as well along toward completion.

Apparently there has been little U.S. participation in the TC 12 program in the past. Inevitably in such a comprehensive study of scientific symbolism, there will be controversy in the development of new or modified symbols and terms, and it is important that each nation be given the opportunity to influence decisions as they are made. Further, a country as strong scientifically as is the United States has an obligation to support such a comprehensive standardization program and to assist in its leadership.

The U.S. representatives were particularly impressed with the extreme care and thoroughness with which the ISO/TC 12 reports had been studied in advance of the meeting by many of the delegates. These reports had been given wide circulation among national committees and groups. Controversial items had been carefully studied and debated in advance of the meeting. Many participating members had prepared carefully documented statements expressing the viewpoint of their countries. In contrast, the U.S. delegates were placed in a weak position by the relatively incomplete and spotty response of ASA Y10 Review Committee members to advance circulation of the TC 12 docu-

ments. Concerning many issues the two representatives had received no instructions and when asked for an opinion had to fall back entirely upon their own judgment. Part of this deficiency may be traced to the fact that Y10 does not have subcommittees corresponding to all of the documents under consideration, e.g., "Physical Chemistry and Molecular Physics" (Document 12N371-amended title) and "Tables and Quantities of Units of Atomic and Nuclear Physics" (Document 12N360).

The two ASA representatives strongly recommend that the standardization of quantities, units, symbols, conversion factors, and conversion tables as employed in the physical sciences be supported strongly at the national level. Further, they urge that cooperation with ISO/TC 12 be given far more serious thought and concern in the future than it has in the past. They recommend that a national committee be established to meet periodically and to devote considerable time to the contents of reports from ISO/TC 12 and to other problems of symbols and terminology so that the opinions of U.S. scientists may be learned and projected into international deliberations. Such a committee could, presumably, be an adjunct of Committee Y10; it could be a National Academy of Sciences-National Research Council committee; or it might be a joint committee selected from the physical sciences. In any event, the committee should be devoted to its task and be prepared to give considerable time to its duties. It should be established soon, since TC 12 has a continuing program and prior to its next meeting two or three years hence will carry on business with its members by mail. Any committee established should have good lines of communication with existing U.S. groups in physics, chemistry, and engineering that have an interest in standardizing the symbolic language of science. The American position would be strengthened greatly if, at TC 12 meetings, the U.S. delegates could take a well thought out position on debatable matters.

Failure to take action will be unfortunate. All of the scientifically significant countries of Europe are participating enthusiastically. One cannot predict the future influence of the finished set of documents, but there are indications that scientific education and the publication of scientific papers in general will be influenced.

The two U.S. delegates express themselves as willing to work in any appropriate way toward a full and more effective U.S. participation in the TC 12 program.

DO YOU KNOW AN EXECUTIVE who has shown outstanding appreciation and support of standardization as a tool of management? Or someone who has made outstanding contributions to the philosophy of the American Standards Association and to development and application of standards at company or industry levels.

Perhaps these individuals qualify for national recognition for these services. If so, now is the time to nominate them for award of The Howard Coonley Medal or The Standards Medal.

These medals are presented during the National Conference on Standards each year.

SEND YOUR NOMINATIONS NOW

For the Howard Coonley Medal

The Howard Coonley Medal is awarded "To recognize outstanding appreciation and support of voluntary standardization as a tool of management through which creative abilities may be released from routine operations, and to emphasize to the business community the importance of such use of standardization by management at high executive levels."

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The Standards Medal recognizes long, devoted and effective service to standardization, and is made "In recognition of outstanding contributions to the philosophy of the American Standards Association and its application to voluntary standardization at the national level as well as the constructive development and application of standards and standardization at either company or industry levels."

Write for forms and instructions for your nominations. Address: American Standards Association, 10 East 40th Street, New York 16, N. Y.

Are These Cases Work Injuries?

This is the thirty-sixth installment in the current series of rulings as to whether unusual industrial injury cases are to be counted as "work injuries" under the provisions of American Standard Method of Recording and Measuring Work Injury Experience, Z16.1-1954 (Reaffirmed 1959). The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply. Decisions on unusual industrial injury cases are issued periodically by the Z16 Committee on Interpretations. Reprints of each double page of cases published in THE MAGAZINE OF STANDARDS can be obtained in quantity from the American Standards Association at $1.50 per 50 copies.

Sectional Committee Z16 is sponsored by the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

INDEX TO CASES 400-800. An index to Cases 400-800 has now been completed. Arranged numerically by the number of the applicable paragraph of American Standard Z16.1-1954 (R1959), the index includes the number of the case indexed and a key letter indicating what the decision was in each case. Each index reference includes a brief description of the case.

Reprints of Cases 400-800, with the index, are now available from ASA at $2.50. Discounts for quantity orders may be obtained on request.

CASE 820 (5.18)

An employee sustained burns to the ankle of the left foot when hot welding slag dropped from material on which he was working with an oxyacetylene torch. The injury occurred on Wednesday, was treated in the plant dispensary on that day, Thursday, and Friday. The dispensary records stated that the burns were healing satisfactorily with no signs of infection.

During the weekend the injury became inflamed, and on Monday the employee called his personal physician who gave him an appointment at 3:15 P.M. He also called his supervisor and informed him that he was not reporting for work because of the appointment to see his doctor at 3:15 P.M. The company then requested the injured man to go to the company physician for an examination.

The company physician discussed the case with the personal physician, and both doctors concurred in the opinion that the employee could report to work at limited activity. The injured employee also stated that he could have reported to work, but the doctor had given him an appointment at 3:15 P.M.

Decision: Although the employee did lose one day's time from work, this case should not be considered a temporary total disability, nor included in the work injury rates, since both doctors agreed that the time lost was not necessitated by the injury, but was rather the result of an independent decision by the employee.

CASE 821 (5.14)

A shop mechanic replaced plexiglass windows, which entailed using a rachet wrench and screw driver a great deal as there were 35 screws and nuts on each window. The man noticed a soreness in his right elbow which persisted and gradually grew worse, but he continued to work. After some time, he went to the company medical department for treatment, and they in turn sent him to an outside doctor who gave him an injection in his arm. The man did not work the following two days because his arm was very sore, but after returning to work he had no more trouble.

The company asked whether this case could be excluded from the rates because of paragraph 5.14.

Decision: This case should be included in the work injury rates on the basis that the employee had a sore arm before the medical treatment; the only symptom after this treatment was a continued sore arm, and therefore the injury did not arise solely out of the drug used in the treatment. The committee's interpretation was that paragraph 5.14 means that if a drug induced an *entirely* and *obviously* different morbid condition from that being treated, then the disability resulting *solely* from this condition would not be considered a work injury.

CASE 822 (1.2.4)

On a Wednesday an employee reported to his supervisor that he had slipped off the edge of a work plate, bumping his chest against a tank frame he was fabricating. He said he had a slight pain in his chest, but he refused to visit a doctor as suggested by his supervisor, mentioning the possibility of visiting a doctor that evening if the pain still persisted.

On Thursday the employee did not report to work, but notified his supervisor that he had visited a doctor the previous evening and was to have an appointment to have an x-ray taken at the clinic sometime during that day. Since the man lived some distance from the plant and was not certain as to the time of the appointment, he preferred to remain at home until he received a call from the doctor.

The employee did not report to work on Friday, and when a company representative visited his home he stated that an x-ray had been taken the previous day and he had been told to return to the doctor's office that afternoon at which time the doctor would have the results of the x-ray findings. The man said he wished to remain at home until the doctor could definitely diagnose his condition; he still had a pain in his chest. Later that day he reported to the plant, stating that the doctor had diagnosed his condition as "fractured eighth rib," and he would report on his regularly scheduled shift on Monday. He did report for work on Monday, and was able to perform his duties.

Decision: This should be considered a temporary total disability and included in the work injury rates on the basis that the employee did sustain an injury which arose out of and in the course of employment, and at least lost time on Thursday because of this injury.

CASE 823 (1.1 and 5.2)

Two laborers were engaged in picking up scrap latex material. The material was shoveled into a wheelbarrow, wheeled to a point approximately 50 ft away, and transferred to a scrap container. The two men attempted to trans-

fer the material into the scrap container by lifting the wheelbarrow about 30 in. and dumping it into the container. The total load was about 100 lb. In making the lift, one of the men, just employed three days before, felt a sharp pain in his back. Upon attempting to use a shovel, he found that he was unable to proceed with his work. He reported to the plant dispensary and was placed on light duty. On the following work day he was sent to the plant doctor and was hospitalized for treatment of a ruptured spinal disc.

The company questioned whether this injury should be included in its rates, since only after the injury had occurred did the company discover that the man had previously suffered a ruptured spinal disc and had received treatment for it from an orthopedic surgeon. In both his employment application and his pre-employment medical interview the man had withheld this information; had it been given, he would have been refused employment in accordance with the plant physical standards. Since all employees were hired on a probationary status for the first 30 days, this man was terminated on the basis that the information he had withheld would have precluded his employment.

Decision: This injury should be included in the rates on the basis that, although the employee had withheld information concerning his physical condition, the injury did arise during and out of employment and should be considered in accordance with paragraph 1.1.

CASE 824 (5.14)

An oven tender suffered a fracture of his left middle finger when it was caught between a door handle and a door on a polymerization oven. He lost no time from the job at this time and continued to work daily. However, about six weeks later a secondary infection developed in the finger. The employee was treated by the attending physician with sulfa drugs. He immediately developed a severe reaction, and it was felt that he had a kidney blockage. However, this was followed by a recurrent attack of malaria fever; he had been bothered by recurrent malaria attacks for some time.

The company physician and the man's personal physician agreed that either the kidney blockage or a malaria attack, or both, might have been triggered by the drugs which this man was given for the treatment of the infection. The employee lost 19 days from work, but there was no permanent partial disability of the injured finger.

Decision: The injury described should not be included in the work injury rates because the time lost was a result of the reaction to the sulfa drugs and not a result of the original injury and infection of the finger.

CASE 825 (5.4)

A worker felt pain in his left knee while moving bags from a bagging machine to a storage pallet. The act of turning from the bagging machine to the pallet apparently wrenched the knee. The man was referred to a doctor who treated him and allowed him to return to work with no lost time resulting. The treatment continued for several weeks, and two months later the worker was referred to an orthopedic specialist because the pain recurred from time to time.

The orthopedic specialist indicated that the man's knee was subject to such injuries, that the origin of the condition could not be determined exactly, and he prescribed treatments and exercises. Gradually the knee improved, and the worker was not impaired in performance of his work assignments.

Seven months later the worker was waiting for the lunch wagon to arrive at its stopping point in the plant. He had stopped work and had begun his regular lunch period. While standing and waiting, he felt pain in the same knee; after lunch he reported the incident to his foreman, who advised him to return to the doctor who had treated him earlier. No clear-cut act on the part of the employee to cause the pain could be described. The doctor prescribed surgery two months hence, and the man returned to work in the meantime without suffering lost time.

Decision: The incident described should not be considered a work injury and should not be included in the rates, since no clear-cut act on the part of the employee to cause the pain 7 months after the incident could be described and, therefore, the condition was not considered to be connected with his work.

CASE 826 (5.3)

A meter reader had a case of athlete's foot which he did not report to his supervisor. He continued walking on his route, and eventually an infection developed, resulting in the man's being hospitalized for treatment and observation. The infection was not connected with the use of plant facilities.

Decision: This case should be considered a work injury and should be included in the rates because the employee's work activity aggravated his previously existing condition, thereby creating the disability.

CASE 827 (5.3)

An industrial tractor operator, while driving the tractor, hit a bump. He was bounced from the seat, and struck his back on the driver's seat. Seven days later he began to lose time because of a collapsed lung. The doctor stated that the collapsed lung was due to a rupture of a cyst on the surface of the lung, and the cyst had probably ruptured when the man struck his back on the driver's seat. It was possible that the cyst would have ruptured before long for one reason or another even if the man had not hit his back on the seat. A question was raised as to whether this injury should be excluded from the rates under paragraph 5.4.

Decision: This injury should be considered a work injury and included in the work injury rates in accordance with the ultimate extent of disability. Paragraph 5.4, which was cited as the reason for not counting the case, refers specifically to cases where an accident arises solely from a pre-existing physical deficiency. Here there was obviously no basis for finding that the lung cyst caused the employee to be thrown against the seat. The event was entirely unrelated to the existence of the cyst, and this case is, therefore, covered by paragraph 5.3 rather than by paragraph 5.4.

CASE 828 (5.2)

No decision because of insufficient facts.

CASE 829 (5.12)

An employee had signed out his time card and was leaving the locale of his employment on his way to the dressing room. When he left the mill building he was with a group of workmen; the man immediately ahead of him did not close the door. The wind was blowing rather hard, and the employee in question lowered his head in an attempt to keep foreign matter from blowing into his eyes. The wind slammed the door into his head. At first he felt he had just received a jolt, but after he reached the locker room his head began to pain him considerably. He was sent to the company doctor where his injury was classified as "hemotoma on side of head—severe pain." The next day the man reported back to the doctor and because the pain still persisted, it was decided that he not work that day. The following day he reported for work at his usual starting time saying he felt fine, and he continued to work without any more lost time.

On the date of the injury, at about the time of the injury, winds of 38 to 39 miles per hour were blowing. This rate was far more violent than was usual for the location, and the company believed that the high winds had caused the injury, and it should therefore not be included in the rates.

Decision: The injury sustained should be included in the work injury rates on the basis that paragraph 5.12 is intended to cover only catastrophic events of overwhelming magnitude, and whereas the wind was undoubtedly strong in this case, it was far from hurricane force and no emergency existed.

STANDARDS FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Information about those standards not selected for listing in THE MAGAZINE OF STANDARDS may also be obtained from the ASA Library. Orders for these standards may be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. For the convenience of readers, the standards are listed under their general Universal Decimal Classification number. In ordering copies, please refer to the number following the title.

534 ACOUSTICS

France (AFNOR)

Standard frequencies for acoustical measurements NF S 30-002

Sound measuring meter of current use NF S 31-005

614.8 ACCIDENT PREVENTION. SAFETY

Australia (SAA)

Respiratory protective devices CZ 11-1960

Canada (CSA)

Specification for a radiation symbol CS Z69-1960

France (AFNOR)

Helmets for motorcyclists NF S 72-301

United Kingdom (BSI)

Seat belt assemblies for motor vehicles BS 3254:1960

USSR

Rubber gloves, acid and alkali protective GOST 9502-60

621.88 MECHANICAL ATTACHMENT AND FIXING

Austria (ÖNORM)

2 stds on screw threads, metric taper ÖNORM M 1516/7

Countersunk screw heads, different types ÖNORM M 1806

Canada (CSA)

Specification for tubular rivets CS B71.5-1960

Denmark (DS)

ISO screw thread profiles. Survey of screw thread systems DS 975

M-screw threads, 0.25-5 mm (ISO metric screw thread, coarse) DS 976

UNC-screw threads, ¼-4 inch (ISO inch screw thread, coarse) DS 977

UNF-screw threads, ¼-1½ inch (ISO inch screw thread, fine) DS 978

Indication of lengths for screws and bolts DS 979

Germany (DNA)

2 stds for light-, single-, and double-pipe clamps DIN 1596/7

Coupling hinge for railroad rolling stock DIN 31210

Semi-finished bolts, 6-24 mm diameter, countersunk head with reverse key DIN 1439

Hungary (MSZH)

4 stds for bolts, metric thread, different heads MSZ 2445/8

Mexico (DGN)

Straight nails B-47-1960

Netherlands (NNI)

Round-headed key bolts. Whitworth screw thread. Grade G NEN 156

Black cup square neck bolts. Whitworth screw thread. Grade G NEN 159

Hexagon castle nuts. Whitworth screw thread. Grade M NEN 730

Hexagonal socket head cap screws. Whitworth screw thread. Grade M NEN 1242

Runouts for products with external metric or Whitworth thread NEN 1286

Set screws with slot and metric thread NEN 1489

Black round countersunk key head bolts NEN 2228

Raised countersunk key bolts. Whitworth screw thread. Grade G NEN 2229

Hexagon bolts. Whitworth screw thread. Grade G NEN 2230

Wing nuts. Whitworth screw thread. Grade MG and G NEN 2324

Wing screws. Whitworth screw thread. Grade MG and G NEN 2325

Hexagon nuts. Whitworth screw thread. Grade M and MG NEN 2338

Hexagon nuts. Whitworth screw thread. Grade G NEN 2339

621.9 TOOLS. MACHINE TOOLS

Austria (ÖNORM)

Symbols for designating high-speed cutting tools with hard metal tips ÖNORM M 4390

Czechoslovakia (CSN)

5 stds for different spring collets CSN 24 2107, 2140/3

Germany (DNA)

Milling cutter for wrench opening DIN 849

Half-round milling cutter DIN 855

2 stds for slitting saw for metal, fine and coarse teeth DIN 1837/8

United Kingdom (BSI)

Files and rasps BS 498:Part 1:1960

USSR

Vertical lathes. Basic parameters and dimensions GOST 600-60

Straight-side single-action two-point presses GOST 7766-60

Tool holding on arbors GOST 9472-60

Shell end mills with inserted carbide teeth (fine pitch). Dimensions GOST 9473-60

Face and side milling cutters with alternative teeth. Basic dimensions GOST 9474-60

Forged steel rolls for breakdown and section mills for hot-rolling of ferrous metals. Technical requirements GOST 9487-60

651.2 OFFICE MACHINERY

Czechoslovakia (CSN)

Digital and analogous computers. Terminology CSN 01 6928

664 FOOD INDUSTRY

India (ISI)

Tapioca chips for animal feed IS:1509-1959

Israel (SII)

Canned grapefruit segments	S.I. 112
Canned figs	S.I. 197
Canned apricots	S.I. 335
Canned smoked fish in oil	S.I. 338

• NEWS BRIEFS

• THE BOARD of Review, which acts on behalf of ASA's Standards Council on approval of standards, has the following membership for 1961:

Richard B. Belford, Industrial Fasteners Institute, Cleveland, Ohio.

Hendley Blackmon, engineering manager, Association Activities, Westinghouse Central Laboratories, Pittsburgh, Pa.

J. S. Fassett, director, Membership Services Department, American Hotel Association, New York, N. Y.

C. M. Heinen, Materials Laboratories, Engineering Division, Chrysler Corporation, Highland Park, Mich.

E. O. Mattocks, director of technical services, American Petroleum Institute, New York, N. Y.

J. W. W. Sullivan, metallurgical engineer, American Iron and Steel Institute, New York, N. Y.

C. W. Franklin, Consolidated Edison Company of New York, Inc, New York, N. Y. (*Alternate*)

• THE EIGHTH MEETING of the Standing Committee for the Study of Scientific Principles of Standardization (STACO) met November 25-30, 1960 at Paris, France. STACO is a committee of the International Organization for Standardization.

A report on the coordination of inch and metric standards was one of the most important subjects considered. The report is aimed at preventing the preparation of completely separate standards, one in millimeters and one in inches, on the same subject. It presents a list of corresponding sizes in millimeters and inches (MI) sizes and recommends the use of these sizes as a means of creating one international standard instead of two and at the same time permitting individual countries to retain their specific measuring systems. The report was prepared by a working group consisting of T. R. B. Sanders (United Kingdom), O. Sturen (Sweden), and Dr N. A. J. Voorhoeve (Netherlands). It was thoroughly reviewed and will be transmitted to the Council of the ISO with the recommendation that it be brought to the attention of those technical committees concerned with dimensions, and also, possibly, to the national standardizing bodies that are members of ISO.

STACO recommended that technical committees follow the rules established by ISO/TC 12, Quantities, Units, Symbols, Conversion Factors, and Conversion Tables, in all cases where such symbols are used in ISO Recommendations. STACO is asking that ISO/TC 12 give its opinion on a proposal to designate quantities and units of measurement by means of symbols. This proposal was prepared by the national standards body of Rumania.

A bibliography on statistical methods in standardization was considered and suggestions for changes made. STACO would like ISO Technical Committee 69, Statistical Treatment of Series of Observations, to prepare a simple guide for the use of engineers concerning the application of statistical methods in standardization.

After a long discussion of definitions of the basic concepts of standardization, a tentative definition of the term "standardization" was agreed upon. This proposal will be circulated to the experts who are members of STACO for their written comments.

Subjects which will be considered at future meetings of STACO include an extensive document on the "Aims of Standardization," a guide for setting up terminology standards, rules for the correct scientific and technical explanations to be used by a technical committee when preparing a draft ISO Recommendation, and definitions of additional terms in the field of standardization.

The next meeting has been scheduled tentatively for May 29-June 3, 1961, in Stockholm, Sweden.

At the 1960 meeting, experts from Germany, France, Czechoslovakia, Belgium, Poland, United Kingdom, Sweden, and Switzerland were present. S. D. Hoffman, American Standards Association, attended in place of the U.S. member, J. W. McNair. Professor E. Wegelius, president of the ISO, and H. St Leger, secretary general of ISO, also attended the Paris meeting.

Professor A. Caquot, France, was chairman.

Reported by S. D. Hoffman
U.S. delegate to STACO meeting

• IN THE FIGHT of the railroads for survival, standardization is "one street that has been too lightly traveled," says Raymond J. Keller, secretary to the Purchasing Agent, Southern Pacific Lines in Texas and Louisiana, Houston, Texas. Mr Keller made the statement in an article published in the September 1960 issue of the *Southwestern Purchaser*.

"A program of standardization encompassing the railroad industry opens up a field of possible economies, simplification and coordination between the nation's lines so broad that it is impossible to fully visualize its benefits, but they can only be realized if all the participating roads and departments work together in complete cooperation and with a common objective—a system of standards which will be good for the industry as a whole," Mr Keller said.

"From many sources has come the startling revelation that the railroads have been throwing away millions of dollars annually as a result of NOT standardizing," Mr Keller declares.

• ON RECOMMENDATION of a conference held in New York City December 6, 1960, John R. Townsend, president of the American Standards Association, has appointed a special committee to make recommendations on ASA's role in Pan American standardization. Representatives of 49 national organizations of industry, government departments, and private companies concerned with Latin American manufacturing and trade had attended the conference. They discussed representation of U.S. interests in Pan American standards work by the American Standards Association. This would call for ASA to function as a dues-paying member of the Pan American Standards Committee (PASC). The PASC was established in 1956 to function as a regional standards coordinating body.

Members of the special committee are:

American Iron and Steel Institute—C.M. Parker, assistant vice-president

American Society for Testing Materials—F.L. LaQue, vice-president, International Nickel Corporation

Automobile Manufacturers Association—representative to be named

General Electric Company and General Electric, International—W. A. McAdams, manager, Industrial Standards

Westinghouse Electric International Company—R.L. Jeans, vice-president

The committee's recommendations will be presented to those who attended the December 6 conference and to the membership of ASA.

Cross Indexing Industry and Military Specifications and Standards

As stated in the January issue of The Magazine of Standards (page 23), ASA is engaged in contract work with the Bureau of Ships for the development of cross-indexing between military and industry specifications and standards. It is intended, as a result of this review, that the index of applicable industry standards will be available to the Bureau of Ships for procurement purposes.

Thus far, many instances have been found in which industry and military requirements are in close agreement. However, where there are differences, it is important that they be indicated. For this reason, the cross-index will include a comparison of the applicable industry specifications, and the comparable military document. The following are some examples of work performed to date:

(1) QQ-S-634a-STEEL BARS, ALLOY COLD FINISHED AND HOT ROLLED (GENERAL PURPOSE)

This federal specification can be replaced by ASTM specifications:

ASTM A-322-57T for HR and ANL alloy steel bars

ASTM A-304-57T for H steels processed to end-quenched hardenability

ASTM A-331-57T for cold finished alloy steel bars

QQ-S-624 lists more steels than are contained in the industrial specifications. The ASTM specification, however, lists the more commonly used and more readily obtained AISI grades. Other desired AISI grades may be obtained by so specifying in the purchase order.

Any special requirements in regard to sampling, inspection, and packaging should be specified in the purchase order.

(2) MIL-S-870B, STEEL CASTINGS, MOLYBDENUM ALLOY

ASTM A-217-59T grade WC1 is equivalent to the molybdenum alloy covered by the military specification and is suitable for temperatures up to about 875 F. It is recommended as a substitute for MIL-S-870B.

Any special requirements in regard to sampling, inspection, and packaging should be specified in the purchase order.

(3) MIL-S-860a, STEEL FORGINGS FOR STEAM TURBINE ROTORS

ASTM-A-293-59T is a substitute material for MIL-S-860a. The compositions and the mechanical properties, however, are generally a matter of agreement between the manufacturer and Bureau of Ships and become part of the contract.

(4) QQ-S-763B, STEFL BARS, SHAPES AND FORGINGS, CORROSION RESISTING

ASTM-276-57T is generally equivalent to federal specification QQ-S-763B for steel bars, and ASTM-314-58T is generally equivalent for shapes and forgings. It is recommended that consideration be given to adding types 324, 355, 350, 422, 440F, 440FSe, to ASTM 314-58T. However, any of these grades can be specified at time of purchase.

Any special requirements in regard to sampling, inspection, and packaging should be specified in the purchase order.

(5) QQ-T-390, TIN ALLOY INGOTS AND CASTINGS AND LEAD ALLOY INGOTS AND CASTINGS (ANTIFRICTION METAL) FOR BEARING APPLICATION

ASTM-B23-49T—grades 1, 2, 3, 8, 7, 15, 16, 19—is equivalent to QQ-T-390—grades 1, 2, 3, 6, 7, 10, 11, 13, respectively. Any special requirement in regard to sampling, and to packaging, should be specified in the purchase order.

(6) QQ-A-561C, ALUMINUM PLATE AND SHEET

ASTM B209 alloy 990A or AMS 4001B temper H14 is equivalent to QQ-A-561C, alloy 1100(2S).

The yield strength, bend test, and any special requirement in regard to sampling, inspection, and packaging should be specified in the purchase order.

(7) MIL-S-861A, STEEL BARS, CORROSION RESISTING, NAVAL STEAM TURBINE PARTS USED

ASTM A276-57T can be used for purchase of the following:

Class 403 HT (for machining)
AN (for reforging)
405 AN (for welding)
410 AN (annealed)

Class AISI 422 is not included in ASTM A276-57T. When required, it could be specified in the purchase order. Also, any special requirements in regard to sampling, inspection, and packaging should be specified in the purchase order.

It is recommended that ASTM Committee A-10 give consideration to including AISI 422 in ASTM 276.

(8) MIL-B-16033, BRONZE, ALUMINUM CASTINGS

ASTM B-148-52T, alloys 9A, 9B, 9C, and 9D, are equivalent to MIL-B-16033, class 1, 2, 3, and 4, respectively, except that in class 4 the Bureau of Ships requests the addition of .03 percent lead to the compositions. This is added to increase weldability.

In the present instance for the end application, "Navy Steam Turbines," welding is not indicated. Therefore, the substitution is satisfactory. When welding is indicated, the purchase order should specify the addition of .03 percent maximum lead in alloy 9D. Any special requirements in regard to sampling, packaging, and inspection should be specified in the purchase order.

It is requested that ASTM Committee B-5 give consideration to adding .03 percent maximum lead to alloy 9D in ASTM B-148-52T.

Constructive criticisms or suggestions are invited from interested sources in industry. Such criticism may provide the basis for the development of a closer cooperation between the industry and military.

The progress of this work and a continuation of the listings will be reported from month to month.

New Books . . .

DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS. Part I. Straight Alphabetical Listing. Part II, Numerical Listing (including departmental listing and user and reviewer data). 1 November 1960. Armed Forces Supply Support Center, Washington 25, D. C.

This index lists the unclassified Federal, Military, and Departmental specifications and Federal and Military standards that are used by the Department of Defense. It supersedes three volumes of the Military Index formerly issued:

Index of Specifications and Standards, Used by Department of the Army, Military Index, Volume II, 1 April 1960.

Index of Specifications and Standards, Used by Department of the Navy, Military Index, Volume III, 1 April 1960.

Index of Specifications and Standards, Used by Department of the Air Force, Military Index, Volume IV, dated 1 April 1960.

Part III of the new coordinated index will not be published until the relationship of the Federal supply classification to all standardization documents has been established. Part III will be entitled Federal Supply Classification Listing (specifications and standards listed alphabetically within their respective groups and classes).

THE WHY AND HOW OF INTERNATIONAL STANDARDS. American Standards Association, 10 East 40 Street, New York 16, N. Y. Single copies free of charge.

Since the end of World War II, over 40 new nations have come into being. Most of them are economically underdeveloped, but eager to industrialize.

In order for these and all other countries to trade with one another, international industrial standards—covering everything from power supply to screw threads—are required.

This new booklet goes a long way toward detailing many of the problems that have to be faced and the ways they are being solved in this important field of commerce.

Differences in standards, according to the booklet, can be a more effective trade barrier than import quotas, currency restrictions, or high tariffs. In many cases newly adopted foreign standards are at variance with the accepted American counterpart, thereby increasing the restrictions on the sale of U.S. products abroad.

The solution suggested in the booklet is the creation of voluntary international standards that can be used by all nations sharing an economic interest.

The booklet describes the objectives and operations of the two international standards organizations: The International Organization for Standardization (ISO), and the International Electrotechnical Commission (IEC). U.S. participation in these organizations is through the American Standards Association.

NEW INTERNATIONAL RECOMMENDATIONS

ISO Recommendations are published by the International Organization for Standardization, and IEC Publications by the International Electrotechnical Commission, Geneva, Switzerland. Copies are available from ASA.

HERMETICALLY SEALED METAL FOOD CONTAINERS. ISO R 90. March 1959. First edition. $1.80.

Recommends methods to be used internationally for determining container capacity, methods of designation by capacity and characteristic dimensions, and marking of containers. Includes definitions and description of various kinds of cans. An Appendix lists abbreviations accepted or proposed by other countries to signify country of origin of shipped goods.

SAMPLING OF LATEX. ISO R 123. August 1959. First edition. $0.60

DETERMINATION OF TOTAL SOLIDS OF LATEX. ISO R 124. August 1959. First edition. $0.60.

DETERMINATION OF ALKALINITY OF LATEX. ISO R 125. August 1959. First edition. $0.60.

DETERMINATION OF DRY RUBBER CONTENT OF LATEX. ISO R 126. August 1959. First edition. $0.60.

The above ISO Recommendations describe procedures for sampling and methods of test, respectively, for natural rubber latex which contains preservative agents and which may have been submitted to some type of concentration process. The procedures are not necessarily suitable for latices from natural sources other than *Hevea brasiliensis* or for latices of synthetic rubber, compounded latex, vulcanized latex, or artificial dispersions of rubber.

DETERMINATION OF KOH NUMBER OF LATEX. ISO R 127. August 1959. First edition. $0.90.

This method of test is for natural rubber latex preserved wholly with ammonia and formaldehyde. The KOH number is the number of grams of potassium hydroxide equivalent to the acid radicles combined with ammonia in latex containing 100 grams of solids.

SIMPLE TORSION TESTING OF STEEL WIRE. ISO R 136. October 1959. First edition. $0.60.

Specifies the testing machine and test piece to be used in the simple torsion testing of steel wire of nominal sizes of 0.5 mm (0.02 in.) and greater. Also outlines the test procedure and test requirements.

RECOMMENDATIONS FOR THE RATED IMPEDANCES AND DIMENSIONS OF LOUDSPEAKERS. IEC Publication 124. 1960. First edition. $1.20.

Applies to single moving-coil (dynamic) loudspeakers of the direct-radiator type. The publication lays down a series of rated impedances of the moving coil and the mounting dimensions (size and arrangement of the mounting holes). The dimensional recommendations are limited to loudspeakers having cones of circular section.

RECOMMENDATIONS FOR POLYCRYSTALLINE SEMICONDUCTOR RECTIFIER STACKS AND EQUIPMENTS. IEC Publication 119. 1960. First edition. $8.00.

This publication applies to selenium and copper-oxide stacks, rectifiers and rectifier equipments used for supplying d-c power from a-c sources at frequencies up to 2,000 cps (Hz). It does not apply to telecommunication rectifiers other than those for power supplies to such apparatus, nor to rectifiers used as auxiliaries of measuring instruments.

. . . *Questions*

Can you give us information on the speed of manufactured dental roentgenographic films?

ASA does not have information on the speed of particular films. ASA work establishes procedures for determining the speed of film, but ASA has no facilities itself for determining these values. These must be obtained from the film manufacturer. At present the American Standard Method for the Sensitometry of Medical X-ray Films, PH2.9-1960, is the standard in this field nearest to dental film.

A new committee, Dental Radiographic Films, PH6, organized just recently, with Dr C. C. Paffenbarger as chairman, is now assigned responsibility for developing standards for dental film. Dr Paffenbarger's address is: American Dental Association, care of Research Division, National Bureau of Standards, Washington 25, D. C.

Are standards available for shaft keys, keyslots, and keyways?

Some years ago there was an American Standard which established the sizes and tolerances of shaft keys—square, rectangular, parallel, tapered, and others. However, the tolerances given in the standard were not followed by the American industry and the standard was withdrawn in 1954. The American Gear Manufacturers Association and the Conveyor Equipment Manufacturers Association have both issued standards based on their studies of the problem; however, these standards are in serious conflict.

Increasing interest in standards for shaft keys has been indicated steadily since the standard was withdrawn. Therefore, within the past year the American Standards Association has requested the American Society of Mechanical Engineers, sponsor of the former B17 project on keys, keyslots, and cutters, to investigate the situation with a view to reactivating the project. The reactivation is now under way.

Can you give me the standard pitch diameters for straight pipe threads used on rigid steel conduit?

The "max" and "min" pitch diameters of these straight pipe threads are given in Table C2 of Appendix C in American Standard B2.1-1960, Pipe Threads (Except Dryseal). Also, reference to this straight pipe thread is to be found in the American Standard Specification for Rigid Steel Conduit, C80.2-1959.

AMERICAN STANDARDS

Just Published . . .

If your company is a member of the American Standards Association, it is entitled to receive membership service copies of these newly published American Standards. The ASA contact in your company receives a bimonthly announcement of new American Standards, which also serves as an order form. Find out who your ASA contact is and order your American Standards through him. He will make sure your company receives the service to which it is entitled.

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

Acoustical Terminology (Including Mechanical Shock and Vibration), S1.1-1960 (Revision of Z24.1-1951) $4.50

Definitions in the field of acoustics, including definitions on sound transmission and propagation, transmission systems and components, ultrasonics, hearing and speech, music, architectural acoustics, recording and reproducing, underwater sound, shock and vibration, and acoustical units.

Sponsor: Acoustical Society of America

Electroacoustical Characteristics of Hearing Aids, Methods for Measurement, S3.3-1960 (Revision of Z24.14-1953) $1.00

Practicable and reproducible methods of determining certain physical performance characteristics of air-conduction hearing aids that use electronic amplification and acoustic coupling to the ear canal by means of ear inserts.

Sponsor: Acoustical Society of America

BUILDING AND CONSTRUCTION

Installation of Ceramic Tile with Dry-Set Portland Cement Mortar, Specifications for, A108.5-1960 $1.00

Covers application of domestic ceramic tile. Preliminary preparation; bonding to concrete or masonry walls; flashing and drainage; concrete slabs and masonry.

Sponsor: Tile Council of America

ELECTRIC AND ELECTRONIC

Synthetic Rubber Insulation for Wire and Cable, 60 C Operation, Specification for, ASTM D 755-58; ASA C8.23-1960 (Revision of ASTM D 755-52T; ASA C8.23-1954) $0.30

Synthetic Rubber Insulation for Wire and Cable, 75 C Operation, Specification for, ASTM D 754-58; ASA C8.24-1960 (Revision of ASTM D 754-52T; ASA C8.24-1954) $0.30

Natural Rubber Performance Insulation for Wire and Cable, 60 C Operation, Specification for, ASTM D 353-58; ASA C8.26-1960 (Revision of ASTM D 353-52T; ASA C8.26-1954) $0.30

Physical and electrical requirements for subject insulation for wire and cable for applications not exceeding 2000 v.

Sponsor: American Society for Testing Materials

GAS-BURNING APPLIANCES

Approval Requirements for Gas Unit Heaters, Z21.16-1960 (Revision of Z21.16-1957, Z21.16a-1958, Z21.16b-1959) $2.00

Sponsor: American Gas Association

In Process . . .

As of January 18, 1961

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

American Standard Approved

General-Purpose Sound Level Meters, Specifications for, S1.4-1961 (Revision of Z24.3-1944)

Sponsor: Acoustical Society of America

BUILDING AND CONSTRUCTION

American Standard Approved

Fireclay-Base Castable Refractories for Boiler Furnaces and Incinerators, Specification for, ASTM C 213-58; ASA A111.34-1961 (Revision of ASTM C 213-55; ASA A111.34-1955)

Sponsor: American Society for Testing Materials

In Board of Review

Gypsum Plasters, Specification for, ASTM C 28-60; ASA A49.3- (Revision of ASTM C 28-59; ASA A49.3-1959)

Sponsor: American Society for Testing Materials

Gypsum Wallboard, Specification for, ASTM C 36-60; ASA A69.1- (Revision of ASTM C 36-59; ASA A69.1-1959)

Sponsor: American Society for Testing Materials

Gypsum and Gypsum Products, Methods of, ASTM C 26-60; ASA A70.1- (Revision of ASTM C 26-59; ASA A70.1-1959)

Sponsor: American Society for Testing Materials

Sampling and Testing of Brick, Methods of, ASTM C 67-60; ASA A82.1- (Revision of ASTM C 67-57; ASA A82.1-1958)

Sponsor: American Society for Testing Materials

Sampling and Testing Structural Clay Tile, Methods of, ASTM C 112-60; ASA A83.1- (Revision of ASTM C 112-52; ASA A83.1-1953)

Sponsor: American Society for Testing Materials

Facing Brick (Solid Masonry Units Made from Clay or Shale), Specification for, ASTM C 216-60; ASA A99.1- (Revision of ASTM C 216-57; ASA A99.1-1958)

Sponsor: American Society for Testing Materials

Evaluating the Properties of Wood-Base, Fiber- and Particle-Panel Materials, Methods of Test for, ASTM D 1037-60T; ASA O8.1- (Revision of ASTM D 1037-56T; ASA O8.1-1958)

Sponsor: American Society for Testing Materials

In Standards Board

Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units, Specifications for, ASTM C 126-60T; ASA A101.1- (Revision of ASTM C 126-59T; ASA A101.1-1960)

Sponsor: American Society for Testing Materials

Asphalt-Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 226-60; ASA A109.2- (Revision of ASTM D 226-56; ASA A109.-2-1956)

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 250-60; ASA A109.4- (Revision of ASTM D 250-56; ASA A109.4-1956)

Woven Cotton Fabrics Saturated with Bituminous Substances for Use in Waterproofing, Specifications for, ASTM D 173-60; ASA A109.12- (Revision of ASTM D 173-44; ASA A109.12-1955)

Sponsor: American Society for Testing Materials

Refractory Materials, Methods of Chemical Analysis, ASTM C 18-60; ASA A111.2- (Revision of ASTM C 18-52; ASA A111.2-1955)

Sponsor: American Society for Testing Materials

Door and Frame Preparation for Mortise Door Locks, Specifications for, A115.1- (Revision of A115.1-1959)

Sponsor: National Builders' Hardware Association

CHEMICAL

In Standards Board

Common Name for the Pest Control Chemical 2-chloro-4, 6-bis(ethylamino)-*s*-triazine: simazine, K62.28-

Common Name for the Pest Control Chemical 2-chloro-4-diethylamino-6-ethylamino-*s*-triazine: trietazine, K62.-29-

Sponsor: U.S. Department of Agriculture

CINEMATOGRAPHY

In Board of Review

Dimensions for 65mm Motion-Picture Film, KS-1870, PH22.118-

Dimensions for 70mm Motion-Picture Film, Perforated 65mm, KS-1870, PH22.119-

Sponsor: Society of Motion Picture and Television Engineers

CONSUMER GOODS

In Standards Board

Liquid Toilet Soap, Specifications for, ASTM D 799-60T; ASA K60.14- (Revision of ASTM D 799-51; ASA K60.-14-1952)

Sponsor: American Society for Testing Materials

ELECTRIC AND ELECTRONIC

American Standard Approved

Requirements and Terminology for Specialty Transformers, Including Cold-Cathode Lighting Transformers, C89.1-1961 (Revision of C89.1-1957)

Sponsor: National Electrical Manufacturers Association

In Board of Review

Electrical Power Insulators, Test Methods for, C29.1- (Revision of C29.1-1944)

Sponsor: Electrical Standards Board

In Standards Board

Outlet Receptacles, Attachment Plug Caps and Appliance Plugs, C73.1- (Revision of C73.1-1957 and supplement C73.1a-1959)

Sponsor: National Electrical Manufacturers Association

Nomenclature for Glass Bulbs Intended for Use with Electron Tubes and Electric Lamps, C79.1- (Revision of C79.1-1958)

Sponsor: Electrical Standards Board

HIGHWAY TRAFFIC

American Standard Approved

Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1-1961 (Revision of D6.1-1955)

Sponsors: National Joint Committee on Uniform Traffic Control Devices; American Association of State Highway Officials; Institute of Traffic Engineers; National Committee on Uniform Traffic Laws and Ordinances; National Association of County Officials; American Municipal Association

MATERIALS AND TESTING

In Standards Board

Rockwell Hardness of Plastics and Electrical Insulating Materials, Method of Test for, ASTM D 785-60T; ASA K65.3- (Revision of ASTM D 785-51; ASA K65.3-1959)

Specific Gravity of Plastics, Methods of Test for, ASTM D 792-60T; ASA K65.8- (Revision of ASTM D 792-50; ASA K65.8-1959)

Sponsor: American Society for Testing Materials

Hardness Conversion Tables for Metals (Relationship Between Brinell Hardness, Diamond Pyramid Hardness, Rockwell Hardness, and Rockwell Superficial Hardness), Z76.4- (to replace American Standards Z76.1-1955, Z76.2-1955, and Z76.3-1955)

Sponsor: American Society for Testing Materials

MECHANICAL

In Board of Review

Boundary Dimensions for Ball and Roller Bearings, B3.6-

Sponsor: Anti-Friction Bearing Manufacturers Association

In Standards Board

Miniature Screws, B18.11-

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Deep-Well Vertical Turbine Pumps, Specifications for, B58.1- (Revision of B58.1-1955)

Sponsor: American Water Works Association

Shapes and Sizes of Diamond Grinding Wheels, Hand Hones, and Mounted Wheels, B74.3-

Sponsor: Grinding Wheel Institute

Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines, Specifications for, ASTM B 16-60; ASA H8.1- (Revision of ASTM B 16-58; ASA H8.1-1959)

Sponsor: American Society for Testing Materials

METALLURGY

In Standards Board

Zinc-Coated (Galvanized) Steel Tie Wires, Specification for, ASTM A 112-59; ASA G8.4- (Revision of ASTM A 112-33; ASA G8.4-1935)

Zinc Coating (Hot-Dip) on Iron and Steel Hardware, Specifications for, ASTM A 153-60; ASA G8.14- (Revision of ASTM A 153-59; ASA G8.14-1959)

Sponsor: American Society for Testing Materials

Uncoated Wrought Iron Sheets, Specifications for, ASTM A 162-60T; ASA G23.1- (Revision of ASTM A 162-39; ASA G23-1939)

Sponsor: American Society for Testing Materials

Gray Iron Castings, Specifications for, ASTM A 48-60T; ASA G25.1- (Revision of ASTM A 48-56; ASA G25.1-1956)

Sponsor: American Society for Testing Materials

Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 203-60; ASA G33.1- (Revision of ASTM A 203-56; ASA G33.1-1956)

Sponsor: American Society for Testing Materials

Mild-to-Medium-Strength Carbon-Steel Castings for General Application, Specifications for, ASTM A 27-60; ASA G50.1- (Revision of ASTM A 27-58; ASA G50.1-1959)

Sponsor: American Society for Testing Materials

High-Strength Steel Castings for Structural Purposes, Specifications for, ASTM A 148-60; ASA G52.1- (Revision of ASTM A 148-58; ASA G52.1-1959)

Sponsor: American Society for Testing Materials

Electrodeposited Coatings of Lead on Steel, Specifications for, ASTM B 200-60; ASA G53.8- (Revision of ASTM B 200-55T; ASA G53.8-1956)

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MISCELLANEOUS

In Standards Board

Thermometers, Specifications for, ASTM E 1-60; ASA Z71.1- (Revision of ASTM E 1-60; ASA Z71.1-1960)

Sponsor: American Society for Testing Materials

Reaffirmation Being Considered

Rules for Rounding Off Decimal Values, Z25.1-1940(R1947)

PHOTOGRAPHY

American Standard Approved

Micro-Opaques, Specifications for, PH5.5-1961

Sponsor: American Library Association

In Board of Review

Photographic Sheet Paper for General Use, Dimensions for, PH1.12- (Revision of PH1.12-1953)

Industrial X-ray Sheet Film (Inch Sizes), Dimensions for, PH1.15- (Revision of PH1.15-1953)

Graphic Arts Sheet Film (Inch and Centimeter Sizes), Dimensions for, PH1.16- (Revision of PH1.16-1953)

16-Millimeter 100-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.33- (Revision of Z38.1.52-1951)

16-Millimeter 200-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.34- (Revision of Z38.1.53-1951)

35-Millimeter 100-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.35- (Revision of Z38.1.54-1951)

70-Millimeter 100-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.36- (Revision of Z38.1.55-1951)

Sponsor: Photographic Standards Board

Photographic Grade 1-Phenyl-3-Pyrazolidone, Specification for, PH4.136-

Photographic Grade Sodium Thiosulfate, Anhydrous (Anhydrous Hypo), Specification for, PH4.250- (Revision of PH4.250-1953)

Photographic Grade Sodium Thiosulfate, Crystalline (Crystal Hypo), Specification for, PH4.251- (Revision of PH4.-251-1953)

Photographic Grade Ammonium Thiosulfate Solution (Ammonium Hypo Solution), Specification for, PH4.252- (Revision of PH4.252-1953)

Photographic Grade Ammonium Thiosulfate (Ammonium Hypo), Specification for, PH4.253- (Revision of PH4.253-1953)

Photographic Grade Sodium Bisulfite, Anhydrous (Sodium Metabisulfite), Specification for, PH4.276- (Revision of PH4.276-1958)

Sponsor: Photographic Standards Board

In Standards Board

Thickness of Photographic Paper, Designation for, PH1.1- (Revision of PH1.-1-1953)

Sponsor: Photographic Standards Board

Speed of Reversal Color Films for Still Photography, Method for Determining, PH2.21-

Sponsor: Photographic Standards Board

Photographic Flashlamps—ASA Type 250, Dimensions for, PH3.36-

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

In Standards Board

Standard Strength Unglazed Clay Pipe, Specifications for, ASTM C 261-60T; ASA A106.4- (Revision of ASTM C 261-59T; ASA A106.4-1960)

Clay Pipe, Methods of Testing, ASTM C 301-60T; ASA A106.5- (Revision of ASTM C 301-55; ASA A106.5-1955)

Sponsor: American Society for Testing Materials

SAFETY

In Board of Review

Safety Code for Laundry Machinery and Operations, Z8.1-

Sponsors: International Association of Governmental Labor Officials; National Association of Mutual Casualty Companies; Institute of Industrial Launderers

TEXTILES

In Board of Review

Methods of Testing and Tolerances for Certain Wool and Part Wool Fabrics, ASTM D 462-59; ASA L14.28- (Revision of ASTM D 462-53; ASA L14.28-1954)

Methods of Testing Felt, ASTM D 461-59; ASA L14.52- (Revision of ASTM D 461-57T; ASA L14.52-1959)

General Methods of Testing Woven Fabrics, ASTM D 39-59; ASA L14.68- (Revision of ASTM D 39-49; ASA L14.68-1951)

Methods of Test for Number of Neps in Cotton Samples, ASTM D 1446-59T; ASA L14.97- (Revision of ASTM D 1446-53T; ASA L14.97-1957)

Method of Test for Micronaire Reading of Cotton Fibers, ASTM D 1448-59; ASA L14.99- (Revision of ASTM D 1448-56; ASA L14.99-1957)

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

Withdrawal Being Considered

Test Method for Dimensional Changes in Textile Fabrics (Other Than Cotton and Linen), AATCC 40-1952; ASA L14.76-1960

Test Method for Colorfastness to Mercerizing, AATCC 51-1952T; ASA L14.80-1956

Test Method for Damage Caused by Retained Chlorine, AATCC 69-1958T; ASA L14.86-1960

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Engineers

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●

SPECIFICATION ENGINEERS

BS or equivalent. Prefer experience in organizing and carrying out specification program for missile launching equipment. In addition, should have experience in detail model specifications as well as military specs. Should be able to interpret contract requirements and related specifications.

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AMERICAN STANDARDS PROJECTS

Safety Code for Window Cleaning, A39—

Sponsor: National Safety Council

Safety requirements for platform hoists and elevators to be used on the outside of buildings for window-cleaning purposes will be developed by a subcommittee just organized. When completed, the standard will be a companion document to the American Standard Safety Code for Window Cleaning, A39.1-1959.

Plumbing, A40—

Sponsors: American Public Health Association; Building Officials Conference of America; National Association of Plumbing Contractors

After reviewing progress in revising the National Plumbing Code, A40.8-1955, the sponsors believe a draft will be ready for committee vote early this spring.

Centrifugal Pumps for Chemical Industry Use, B73—

Sponsors: Manufacturing Chemists' Association; Hydraulic Institute

"After five turbulent years of sparring and wrangling among users and makers of pumps, standardization has now moved a major step forward," comments *Chemical Week* in its October 28, 1960, issue. The step to which the magazine refers was taken at a meeting of Sectional Committee B73 on October 19, 1960. Standards for two basic pump styles in 12 sizes were approved at the meeting, and the committee will soon be asked to vote by ballot on the new standards. "The pump committee's progress at last should help clear the air for groups now considering standardization of other types of equipment," the article declares.

The committee's progress has been made in the face of considerable argument, the article explains. Proponents of standards claim that established pump standards could mean less process downtime and lower spare-parts inventories for chemical companies and result in an estimated $6.8-million savings.

Those opposing standardization contend that it will stifle engineering initiative and cut competition among pump makers—even force some makers out of business.

"Heated opposition such as this faces any standardization group, but the situation is usually cooled by time and discussion," comments *Chemical Week*.

"However, even failure to come up eventually with standards could result in gains," the magazine declares and quotes an engineer at one pump company as pointing out: "The meetings have helped to educate users and makers on the needs and desires of each. And that should improve everyone's understanding of pump technology."

Road Users' Safety Helmets—

The Sports Car Club of America has asked ASA to initiate a project to develop standards for helmets used in protecting sports car drivers. Research has already been done on this subject by the Snell Memorial Foundation, the Club reports. Dr George G. Snively, who was in charge of the Foundation's research program on helmets, attended the recent meeting in London, England, of the International Organization for Standardization's Technical Committee 94, Protective Helmets. Sectional Committee Z2, Protection of Heads, Eyes, and Respiratory Organs is responsible for developing USA opinion in connection with the work of ISO/TC 94.

It is expected that a general conference of organizations concerned will be held soon to consider the proposed project.

U.S. Committee for ISO/TC 38, L23—

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

D. S. Hamby, professor of textiles, School of Textiles, North Carolina State College, Raleigh, North Carolina, has now taken office as chairman of Committee L23. The committee works closely with ASTM Committee D-13 on Textiles in developing the U.S. viewpoint for presentation to ISO Technical Committee 38. Professor Hamby started his career with the Goodyear Tire and Rubber Company, changing in 1943 to the Celanese Corporation of America, Rome, Georgia. He then spent a year with the B. F. Goodrich Company at Akron, Ohio, before taking his present assignment as Burlington Industries Professor of Textiles at North Carolina State College. He is a member of many of the college committees, including the Faculty Senate, and chairman of the School of Textiles Course, Curriculum and Advisory Committee. He has written and edited many publications on quality control of textiles, textile research, and textile testing. He is a Fellow of the Textile Institute and is a past chairman and past treasurer of the Textile Division, American Society for Quality Control. He is now chairman of the long-range planning committee of the Society's Textile Division. He is also a member of the Publications Committee and of the Committee for International Relations, American Society for Quality Control. Professor Hamby is active in the work of ASTM as chairman of Subcommittee B-8 and also as first vice-chairman of ASTM Committee D-13.

D. S. Hamby

At a meeting of Committee D-13 in New York, October 20, the chiefs of the U.S. delegation to the 1960 meetings of ISO/TC 38, in London, England, reported on the work done there. Seventeen delegates had attended from the USA. The national standards bodies of 23 nations participated in the London meetings. The most significant single event, one of the delegates reports, was solution of the problem of specifying named, patented, or proprietary instruments in ISO methods (see page 49).

Technical Committee 38 already has developed and secured approval of several ISO Recommendations, among them the new tex system for numbering yarn, a method of designating the direction of twist of yarn,

and a series of colorfastness tests. The tex method is being publicized in the United States and a start is being made in putting it to use.

Commenting on the work of the ISO and on criticisms that it progresses too slowly, A. G. Scroggie, chairman of Subcommittee B-6 of ASTM Committee D-13, said:

"Even before final agreement is reached on an ISO standard, it is exerting considerable influence on the development of national standards. You may think of it as a sort of inverse pre-natal influence. Once an ISO method has been drafted and put on paper, and is available to member nations, progress has been made. The draft proposal has considerable status and individual committees consider carefully the proposed ISO wording or suggestions in preparing their national standards. As an example, the proposed definitions, while not yet approved by ISO, are in many cases clearly superior to the wording which we now have in ASTM D 123 and it is anticipated that we will revise our standard definitions within a year and have them quite close to what the ISO may finally approve at a meeting two or three years hence.

"This sort of feed-back arrangement is also in effect for our standard on unevenness of textile strands where some points developed in the ISO meeting are being incorporated in a proposed revision of the ASTM standards. This will of course be completed long before the ISO document reaches the stage of final approval."

Drawings and Drafting Practice (Exclusive of Architectural Drawings), Y14—

Sponsors: American Society of Mechanical Engineers; American Society for Engineering Education

A new subcommittee has been authorized to help provide uniformity between military and industrial drafting practices. Sectional Committee Y14 has 19 technical subcommittees concerned with the development of uniform drafting practices in various fields of engineering. It will be the responsibility of the new coordinating subcommittee to coordinate work between military and industrial standards falling within the scope of any of these technical subcommittees. In fields where no technical subcommittee exists, the group will undertake to develop proposals for coordination.

A Guest Column

STANDARDS ALIVE

by Dr Carl J. Rudolph

NATIONAL STANDARDIZATION has been needed for spectacle lenses in this country ever since their origin. In 1956, it appeared that this worthwhile objective might be accomplished. While I was chairman of the Indiana Interprofessional Committee on Eye Care, I had obtained the aid of the American Standards Association. On March 6, 1956, ASA called a meeting, the first of a series of three. All ethical, interested segments of the industry were represented, including governmental and professional representatives, optical manufacturers, wholesalers, dispensers, and others—21 organizations in all.

At that meeting, in emphasizing the need for a lens standard, I pointed out that the people of the United States at present find themselves in a position similar to that of the Armed Forces in 1942. In the service at that time I saw many of my prescriptions filled with inferior materials. Dr W. C. Carter of the Department of the Army verified my impression. He added that it was necessary for the Department to formulate its own standards in order to provide decent spectacles.

Dr Glenn Fry, head of the Department of Optometry at Ohio State University, has also frequently pointed to the need for a national standard for spectacle lenses.

The meeting called by ASA in 1956 led to organization of a committee. Since then much work has been done. However, it is disappointing to have to report that the intricate relationships between manufacturers, laboratories that grind the lenses, and ophthalmologists have prevented any agreement on acceptance of standards. Now, this committee is about to be discharged. This is unfortunate for all concerned, but particularly so for the person who wears spectacles.

I cannot believe that anything less than the best is good enough for one's only pair of eyes. Nevertheless, I am told on good authority that 50 percent or more of the spectacle lenses dispensed are not equal to what is considered first quality by reputable optical manufacturers.

A number of obstacles seem to be in the way of agreement on standards: (1) Profits of intermediary groups when they supply second-quality lenses for first quality (unbeknown to the ophthalmologist or optometrist); (2) Fear of some optical manufacturers that foreign imports may ride on the apron strings of national standards; (3) The fact that professional men do not seem to realize: (*a*) that businessmen do not receive indoctrination into professional ethics as we know them, (*b*) that those they trust may believe they need extra profits, (*c*) that the Pure Food and Drug Act gives authority to an Rx for medicine but does not regulate the filling of an Rx for glasses, (*d*) that law keeps the drug business honest.

For the benefit of all who wear spectacles, we hope these obstacles may one day be overcome.

DR RUDOLPH is chairman of the Lens Standard Committees of the American Academy of Ophthalmology and Otolaryngology and the American Committee on Optics and Visual Physiology.

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